

THE
AMATEUR ARTIST
OR

OIL AND WATER COLOR PAINTING
WITHOUT THE AID OF A TEACHER



A SELF-TEACHING MANUAL
COVERING ALL BRANCHES IN THE ART
OF PAINTING IN OIL & WATER COLORS

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OIL AND WATER COLOR PAINTING
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A Complete Self Educational Treatise, giving thorough instructions in nine branches of Decorative Art, Flower and Landscape Painting in Oil and Water Colors, Pastels on Paper and Leather, Pen and Ink Drawing, China Painting, Pyrography or Burnt-wood Etching, Repousse and Cut-out Brass Work, etc., etc.

BY

F. DELAMOTTE

ILLUSTRATED



CHICAGO

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PREFACE

The aim of this book is to instruct the student in the fundamental principles underlying those branches of art of which it treats and to teach the application of those principles in a clear and concise manner. The knowledge it contains is available, alike to the amateur whose only desire it is to beautify the home and to pass pleasant hours at agreeable work and also to those talented ones who lack the opportunities afforded by art schools and teachers who are out of reach. To the latter, this work contains elements that will quicken the germ of talent or genius into life and send it well on its road to success.

This very late and most complete work on amateur art gives thorough instructions in nine branches of decorative art. Each part is the product of the pen of a famous teacher and lecturer who has made that branch his especial life study.

Unlike other works on the market, it is brought up to date — no obsolete branches being dragged in, to fill out space.

Each chapter contains a complete list of materials and equipment, and instruction enough to develop natural ability to a point where the student may continue, independent of further aid, and trusting to his own individuality of style.

Flower and landscape paintings in water-colors and oils are treated most comprehensively and entertainingly by masters of the art.

That portion devoted to the art of pastels on paper and on hide is from an eminent English authority.

Material is found in the pen and ink section to equip a Gibson or a McCutcheon. And no branch of art pays so well to-day as that of the illustrator and the caricaturist.

The latest ideas of the best American teachers of China decorating are embodied in the chapter on this subject. And there is more instruction in it than one can receive in several lessons under our great "ten-dollar-an-hour" teacher.

That charming branch of home decoration known as pyrography or burnt-wood etching is fully dwelt upon.

And the latest designs and methods in repoussé and cut out brass work lead the pupil into the field of the most fascinating of the popular crafts of the day.

THE AMATEUR ARTIST

CHAPTER I.

THE ART OF LANDSCAPE PAINTING IN OILS.

The following pages treat of one branch of the Art of Oil Painting — that of imitating upon canvas, with fidelity and truth the varied aspects of Nature, as they present themselves to the eye in Landscape. It is taken for granted that the pupil is so far acquainted with the general principles of Drawing and Perspective, as to be able to apply them with facility and certainty, to the representation, in outline, of a given view or subject.

IMPLEMENTS AND MATERIALS.

The Implements and Materials absolutely necessary for Oil Painting are neither numerous nor expensive.

Oil and varnish, a few colors and brushes, a palette, a palette-knife, an easel, a rest-stick, canvas, and a little chalk, will suffice to enable the beginner to make his essay.

It is best for him to buy one of the usual tin oil-painting boxes, fitted completely with the necessary articles. It will contain, besides colors, a set of brushes — comprising hog-hair, sable, and badger brushes; a palette, a knife, porte-crayon, chalk, oil, and varnish. Besides these, there must be an easel, a mahl-stick, a glass slab and muller, and canvas.

Palettes.— Palettes are made of mahogany, and of satin and other light-colored woods; they are also made of papier maché, prepared with white enamel surface — very useful when pale and delicate tints have to be mixed. Palettes should be light in weight, and thin, and so perforated for the thumb as to rest well-balanced on the hand.

Wooden palettes should be prepared for use by rubbing into them as much raw linseed oil as they can be made to imbibe. If this dress-

ing with oil be thoroughly effected, and the palette then be suffered to dry till it becomes hard, the wood will subsequently not be stained by the absorption of color. A palette thus prepared is easily cleaned, and presents a hard and polished surface, exceedingly agreeable for the preparation of tints.

The Dipper is a small tin cup, made to contain oil, varnish, or other vehicle used.

The Palette-knife.—The palette-knife is the implement with which the colors are manipulated on the palette. It is used to mix tints and arrange them. It should be thin and flexible, tapering towards the end.

Two or three flat China tiles, about eight or ten inches square, will be found extremely serviceable for the purpose of keeping the tints clean and apart from each other (the series, for instance, of cold tints from the warm ones). They are also useful to preserve such tints as may be mixed, but not used in the day's work; for the tiles can be immersed, with the colors on them, in dishes of water, and so reserved for the next painting.

The Easel.—The easel is a frame which supports the painting during its progress. The most convenient is the rack easel, which allows the painter to raise or lower his work with speed and convenience, as occasion may require. The commoner and cheaper kind is supplied with pegs for this adjustment of the height of the work. It is desirable that the easel should stand firmly.

The Rest, or Mahl-Stick.—This is used to rest or guide the right hand or arm when particular steadiness is required, as is the case in the painting of small objects and minute details. It should be light, yet firm. The lower end of the stick is held in the left hand, while the upper extremity, which is covered with a soft round ball or pad of leather, to prevent injury, rests on the canvas or some other convenient support.

Brushes.—To paint with effect, it is of the first consequence to have the brushes well selected, and of the best quality that can be procured. The most useful are the hog-hair, sable, and badger brushes.

Hog-hair Tools.—These brushes are made both round and flat. Flat hog-hair are generally more useful than round ones; they are preferred, as assisting in giving a squareness and crispness of touch.

In selecting them be sure that the hair has not been cut at the points, for this is sometimes done with inferior brushes; but such brushes have an unpleasant and coarse touch, laying on the color in a scratchy manner. It will be found to be a good test if they are made of very fine silky-looking hair, and very soft to the touch.

They should, however, be firm, yet elastic, springing back to their form after being pressed laterally upon the hand.

Lastly, their shape should be flat and wedge-like, without straggling or diverging hairs.

It may here be remarked as an important principle, that it is of the greatest use to a beginner to paint with as large brushes as his subject will admit of; for whoever begins with large brushes cannot easily fall into an insignificant petty style.

Sable Brushes.—The observations regarding hog-hair tools will apply to the sable tools; but these latter should have the additional property of coming to a fine yet firm point.

Be careful in choosing those sable brushes, the hair of which is of a pale yellowish cast; and especially see that it is firm, and that it springs well to its point.

The round sable tool is as serviceable as the flat one, and is used in working the finishing parts of a painting. Round brushes in quills, known by the name of sable pencils, are also applicable to the same purpose. Pencils that bag or swell where the hair is inserted in the quill, or the hairs of which diverge and form several points, are worthless.

Badger Tools.—These are known by the significant names of “softeners” and “sweeteners.” They are of various sizes; and the hair, instead of coming to a close end or point as in other brushes, diverges or spreads out, after the manner of a dusting brush. When good, their hair is long, light, and pliant, of a reddish brown, or black, with clean white ends.

The chief use of the badger tool is to “soften” or “sweeten” (as it is termed) broad tints such as skies, water, distances, and the like.

If the badger tool be much employed on a large surface of color (as skies), the points of the hair frequently become so loaded with color, that it is necessary to clean it often as you proceed. This is best done by pinching up the brush rather tightly at the ends, and wiping it on a clean rag. The brush is thus kept free from color during the progress

of your work, which might otherwise be sullied and deteriorated in the purity of its tones.

Cleaning Brushes.—All brushes, after being used, should be carefully cleaned. This is best effected by immersing the hair of the brushes in a little raw linseed oil; the oil should afterwards be washed out with soap and warm water, till the froth, which is made by rubbing the brushes on the palm of the hand, is perfectly colorless. The brushes should next be rinsed in clean water, and the water pressed out by the application of a clean towel. The hair should then be laid straight and smooth, and each brush restored to its proper shape, by passing it between the finger and thumb. Care should be taken not to break the hair by too violent rubbing.

Canvas.—This is the general material used for painting. It is kept prepared in rolls of various widths, and is sold also strained on frames of any required size. The ground or preparation of the canvas should be thin, yet completely covering the threads of the fabric; and it should be free from projecting lines and knots.

Academy Boards.—These are thin millboards. It is the material on which most of the studies made at the school are painted.

They are much used in sketching in oil colors from Nature, to which purpose they are particularly adapted, and are cheaper than canvases.

Grounds.—Much diversity of opinion has existed respecting the color of the surface of the prepared canvas.

The white, or pale cream-colored, and pale, warm, drab-colored grounds, seem to surpass all others. The reason is obvious; they throw a light, and consequently a transparency, through the work.

Upon the whole, a white ground is to be preferred, as soon as the learner has acquired some knowledge of the subsequent effect of his colors; but it will be advisable for the beginner to take the usual light stone drab that is generally given to canvas; for it furnishes him with a middle tint or tone to start from.

COLORS.

Flake White.—Flake White is a preparation of white lead. The best kind possesses great body and permanency, and is of a dazzling whiteness. That called Cremnitz White is sufficient for every purpose.

Aureolin.— This superb yellow possesses a rare combination of invaluable qualities — purity, brilliancy, transparency, and permanence: it ranks in importance with Genuine Ultramarine.

It mixes well with all other colors, forming, with blues, an extensive range of greens of unrivalled brilliancy. Delicately pure and clear aerial greys, suitable for atmosphere, are produced from a combination of Aureolin with Cobalt, Rose Madder, and White, and also from Aureolin, Cobalt, Brown Madder, and White. By substituting Genuine Ultramarine for Cobalt, the tints are still clearer and more delicate.

Reds and Browns, with Aureolin, yield a most exquisite range of tones.

It is of importance to note that, by the side of Genuine Ultramarine and Madder Red, Aureolin completes a triad of brilliant, transparent, and permanent primitive colors.

Naples Yellow.— French Naples Yellow is of an orange-yellow hue, affording light, clear, sunny tints, when combined with white.

Yellow Ochre.— This is a yellow earth of very extensive use. It affords, when combined with Antwerp Blue or Indigo, a fine range of quiet greens.

Transparent Gold Ochre.— The ochre known by this name is a variety of the above, but brighter. It serves for strong vivid semi-transparent greens, and affords bright sunny tints and pure clear greens.

Roman Ochre.— This resembles the last, but it is more opaque.

Raw Sienna.— This is of great service in landscape. It is of a rather impure yellow.

Brown Ochre.— It is a dark brownish yellow, affording, when unmixed, a rich mellow tint, and, when mixed with other colors, a series of rich yet sober tones of extensive use. It is of great service in sandy foregrounds.

Cadmium Yellow.— It is a splendid glowing yellow, invaluable for such subjects as gorgeous sunsets.

It works and dries well, and passes readily into agreeable tints, when combined with white lead.

Pale Cadmium.— Varies from a straw color to a lemon or primrose hue. The very pale varieties are not permanent, but furnish light warm tints of great clearness and beauty.

Chrome Yellow.—There are several varieties of this pigment — *pale, deep, and orange.*

Lemon Yellow.—This is a beautiful light vivid yellow, chiefly adapted for points of high light.

Indian Yellow.—A rich pure yellow, forming full rich greens.

Yellow Lake.—A bright, transparent, vegetable yellow; a difficult drier, and liable to be destroyed by light. It affords beautiful foliage tints.

Italian Pink.—A stronger and richer kind of Yellow Lake, possessing similar properties.

Vermilion.—A durable pigment.

There are several varieties of it manufactured, ranging from a crimson hue, through scarlet to orange. The scarlet hue is most useful for landscape painting. Very tender aerial greys are formed by adding a minute portion of Vermilion to a mixture of Cobalt, or French Ultramarine and White. It is a slow drier.

Indian Red.—This is permanent and a good drier. It ought to be of a purple-lake tone.

Light Red.—It possesses a somewhat orange hue, and is an excellent drier.

Venetian Red.—This has a more scarlet hue than the Light Red.

Cadmium Red.—Is a powerful orange red, of a rich mellow and agreeable quality of tone, most serviceable where rich and clear warm tints are required.

Madder Lake.—Ranges from pink to the deepest rose color, under the names of — Pink Madder, Rose Madder, Madder Lake and Madder Carmine. They are the only permanent transparent reds known. Rose Madder is chiefly used; it possesses great richness and transparency.

Cappah Brown and Burnt Umber sadden Madder Lakes to the rich tones adapted for general use in shadows.

Crimson Lake.—Occasionally used in mixing tints to impart richness; but it has no durability, and is a bad drier; hence to be avoided as much as possible.

Scarlet Lake.—This is never required by the landscape painter. Madder Lake and Vermilion make all the necessary colors of this class.

Purple Lake.—Is used to enrich shadow tints.

Lac Lake, or Indian Lake.—Being rich, transparent and deep, it is of great power.

Ultramarine (Lapis Lazuli).—This exquisitely beautiful blue is transparent in all its shades, and pure in its tints, drying and working well, and carrying light and air into all colors. It has depth also, and remains pure when mixed with white.

Ultramarine Ashes.—They vary in color from dull grey to blue, affording greys much purer and more tender than such as are composed of black and white, or of other blues; they are suited to the pearly tints of foliage, the grey of skies and the shadows of landscapes and buildings.

French Ultramarine (French Blue).—Extremely powerful in tone, and nearly transparent. It is a good substitute for the more expensive Genuine Ultramarine.

Cobalt Blue.—This is a pure light azure, affording clear bright tints in skies and distances. With Light Red it gives beautiful cloud tints, with Madder Brown a range of fine pearly neutrals. It dries well and is nearly transparent.

Prussian Blue.—A deep and powerful transparent blue, drying and glazing well. It borders slightly on green. Its chief use is in mixed tints, of greens, purples, and other such colors.

Antwerp Blue.—A lighter-colored and brighter Prussian Blue.

Indigo.—Not so bright as Prussian Blue. It dries well, and works and glazes satisfactorily.

Ivory Black (Calcined Ivory).—Is the richest and most transparent of the blacks.

Blue Black (Vegetable Charcoal).—Of weaker body than Ivory Black, and better suited for the greys and general mixed tints of landscape painting.

Lamp Black.—Is occasionally used in mixed greys.

Burnt Sienna.—A rich transparent brown orange, affording a range of valuable landscape tints of rich greens, in combination with blues, and of sunny tones when used with white. Permanent and dries well.

Mars Orange.—An artificial iron ochre, of a clearer tone than Burnt Sienna, but not so transparent. It affords bright warm tones with white, but does not answer for greens.

Orange Chrome.— This is the most durable of the chromates of lead.

Field's Orange Vermilion.— It is of glowing warmth, and yields with white, pure and delicate carnation tints that are generally serviceable, and especially in delicate sky tints.

Vandyke Brown (Bituminous Earth).— This is a rich transparent pigment of great durability, but a bad drier.

Cologne Earth.— Resembles Vandyke Brown, except that, in combination with white, it furnishes a range of cooler brown tints.

Cappah Brown.— Is transparent, rich, and deep in color; dries rapidly.

Bone Brown (Ivory Dust roasted).— This is a bad drier, and is not greatly used, but may be applied in forming clear, silvery warm greys in combination with white.

Asphaltum (A solution of Asphaltum in Turpentine).— Its fine brown color and perfect transparency are lures to its free use. It dries rapidly, and when used in excess is liable to crack. Its great transparency causes it to be much used for shadows and for glazing.

Bitumen.— This is Asphaltum ground in strong drying oil, by which treatment it is more eligible for the painter's use.

Madder Brown.— This affords the richest description of shadows, and the most delicate pale tints. With French Blue, or with Cobalt and White, a set of fine warm or cold greys may be obtained. With blues and bright yellows, it gives fine autumnal russet greens.

Raw Umber.— A yellowish brown, of great service in light shadow tones and delicate greys.

Burnt Umber.— A quiet brown, affording clear warm shadow tints. It may be occasionally substituted for Vandyke Brown. It is a quick drier.

Terre Verte.— A sober-toned green earth. Its combinations with Indian Red and Naples Yellow form a series of mild russet greens of much use in middle distance.

Green Oxide of Chromium.— This is a deep-toned green. It is occasionally employed with great effect by admixture with yellows and white. Being very dense it must be used with great care, to avoid heaviness.

When used with a large quantity of white, these cold greens possess a silvery luminous quality, and impart the effect of atmosphere.

Emerald Green.—A brilliant green. Occasionally of value, if discreetly used, in the drapery of a foreground figure; or in a touch on a gaily painted boat or barge.

Brown Pink.—A rich transparent olive, inclining sometimes to green, and sometimes towards the warmth of orange. It is of great depth, and works well, but is a bad drier.

Verona Brown.—An olive brown of great service in tender drab greens, and in combination with *Terre Verte* and *Lakes*; forming, with the latter, rich, autumnal tints of great beauty.

OILS AND VARNISHES.

Vehicle.—The fluid used to temper and thin the colors for the purpose of bringing them to a proper working state.

Vehicles are hardly of less importance than the colors themselves. They are extremely diversified, to suit the various purposes and fancies of the artist; we, however, need treat of those only which are fittest to be employed.

Oils.—The linseed and poppy oils are the fixed oils, used as vehicles; turpentine, and occasionally spike-lavender.

Linseed is in most common use. It should be of a pale amber color, transparent, and limpid; and, when used in moderately warm weather, it should dry in a day. The most valuable qualities of linseed oil as a vehicle, consist in its great strength and flexibility. It is by far the strongest oil, and the one which dries best and firmest under proper management.

Poppy Oil is inferior in strength, tenacity, and drying, to linseed oil; but it has the reputation of keeping its color better; and it is on this account generally employed in grinding white, and most of the light pigments.

Oils are all more or less influenced, in their drying, by the colors with which they are combined; some of which greatly accelerate, while others retard it. With certain colors some oils will scarcely dry at all, unless means are employed to cause them to do so.

Drying Oil is employed with those colors which do not dry well without being forced.

Two kinds are prepared — a dark or strong drying oil, and a paler and less powerful kind.

Japanners' Gold Size is sometimes employed as a powerful means of drying dark and transparent colors, which are in general comparatively bad driers.

The Volatile Oils are destitute of the strength of the fixed oils, having scarcely more cementing power in painting than water alone. *Turpentine* is a very useful addition to linseed oil, for preserving the purity of light and bright pigments from the change of color to which this oil is subject. Owing to their extreme fluidness, the volatile oils are generally useful diluents of the thicker oils, varnishes and vehicles; but the thin essential oils thus introduced often weaken the body of the vehicle, and occasion it to flow so much, that the colors used therewith will not keep their place, rendering the touch of the pencil spiritless and uncertain. These properties give occasion for the introduction of resin and varnish, which communicate a body to oils. These vehicles have been compounded under the name of "*Megilps*."

Megilps.—Possess a gelatinous texture, which enables them, while flowing freely from the pencil, yet to keep their place in painting and glazings.

Megilp may be purchased ready prepared.

A compound used occasionally in combination with megilp, and consisting of one part of copal varnish, one part of linseed or poppy oil, and one part of turpentine, will furnish one with a pleasant and serviceable vehicle for general use. Let him take care, however, to force its drying by the addition of ground sugar of lead, when employed with slowly-drying pigments. In painting skies and other very light-toned masses, drying oil and megilp must be carefully avoided.

Mastic Varnish.—An indispensable requisite in the modern practice of oil painting, in which it is employed not only as a varnish, but as a component part of many of the vehicles in common use.

Copal Varnish.—This greatly assists the drying of colors ground in oil. Employed as a vehicle, when diluted with turpentine. It has the defect of cracking, when used without sufficient drying or other oil to temper it.

PROCESSES AND MANIPULATIONS.

In the production of a painting in Oil Colors, there are certain modes of operation, an explanation of which is necessary. These operations are distinguished by the technical names of —

GLAZING.
IMPASTING.
SCUMBLING.
HANDLING.

GLAZING.

A glaze is a thin transparent film of color, laid upon another color to modify the tone, or to aid the effect of the latter.

This process of glazing is effected by diluting proper transparent colors with megilp or other suitable vehicle. Thus diluted, these colors are laid upon portions of the work, either in broad flat tints or in touches partially and judiciously distributed.

The object of this process is to strengthen shadows, and to give warmth or coldness to their hue; to subdue lights that are unduly obtrusive, or to give additional color and tone to those that are deficient in force and richness, or to produce particular effects, such as representations of smoke, dust, mists, and the like. It must, however, be carefully observed, that extreme caution is necessary in glazing with opaque colors. The student is earnestly recommended to great caution in his first essays in glazing. In no case must glazing be attempted before the colors over which it is laid have become perfectly dry and firm.

IMPASTING.

In oil painting, the shadows or dark portions of the picture are painted thinly, while the lights are laid on or "*impasted*" with a full pencil and a stiff color.

None, however, but the most experienced hands should attempt this most difficult and dangerous process.

SCUMBLING.

Scumbling, the opposite process to that of glazing, is done by going lightly over the work with an opaque tint, generally produced by an

admixture of white. For this purpose a hog-hair brush is usually employed, charged with color but sparingly; and with it the tints are drawn very thinly, and somewhat loosely, over the previous painting, which, be it observed, should, as in the case of glazing, be dry and firm. *Scumbling* is used to modify certain effects, by rendering the portion to which it is applied cooler, greyer, and less defined than it was before, and to give air and distance to objects that seemed too near.

HANDLING.

By "Handling" is meant the mechanical use of the pencil, or brush; exhibiting the artist's power of adapting certain modes and processes in the expression and representation of the different textures of objects, such as foliage, wood, water, and so on.

Every painter falls into a manner or style of painting, as peculiar to himself as is his handwriting.

The young artist should not, however, be led away by his desire to display spirit, so as to leave the marks of his pencil everywhere visible. Distant objects, by too much pencilling, and to accurate drawing, lose the effect of distance.

BREADTH.

As *breadth* is one of the great principles of art, and without it no picture can be agreeable to the eye, it is necessary that this quality be secured. By breadth is meant a treatment that suppresses or generalizes unimportant details, which, if made too conspicuous, would enfeeble the proposed effect of the work. Thus it is not the omission of detail that in anywise promotes breadth, but the proper method of dealing with minute material. A picture painted with truth and freedom does not importune the eye with its detail, but it presents an effective and well-harmonised whole, unbroken by the crude spottiness of detail to which too much importance may be given; yet there may appear in it the rust on the head of a nail, or the most minute characteristic of any small object, without disturbing the breadth of the work.

The *finish* of a picture means a treatment which gives proper attention to all the details of the composition, whether in light or shade. But it is positively essential that this finish should not disturb the breadth. Every object must keep its place, but pre-eminence must be allowed to the principal features of the picture.

LIGHTS AND DARKS, GRADATIONS AND FOCUS.

The principal light in the picture, whether bright or subdued, should always maintain its precedence in tone and size — so necessarily all other lights are subordinated. The shape and size of principal lights may be varied, but the inferior gradations must never be allowed to interfere with the principal. Those pictures in which the dominant form is light are more grateful to the sense than those in which the principal form is dark. As the dispositions of the lights and darks in a picture constitute so much of its value, too much attention cannot be given to this part of the study. It is from the shade that the lights acquire their brilliancy. The light passages are those in which the full force of color prevails; whereas the best characteristic of shade is repose, which must not be disturbed by violent contrasts.

TO PAINT LIGHT.

Sunlight must be painted by tints slightly prismatic, composed of red, yellow, and blue, that obviate coldness and realize æriel effects. A judicious use of the three primary colors will always produce harmony, whatever be the subjects to be treated; thus from the following tints may be produced the brightest sunlight with gradations to the lowest compounds in the scale.

1. Naples yellow or cadmium, vermilion and cobalt, for the higher lights.
2. Raw sienna or brown ochre; vermilion, madder lake, and French blue or ultramarine.
3. Light red or Indian red, brown ochre, and indigo with ultramarine.
4. Raw umber, madder brown, and indigo with a little burnt sienna.
5. Burnt sienna, madder brown, and lamp-black.
6. Burnt umber, madder purple or burnt lake, and black.

PRINCIPLES AND RULES FOR LANDSCAPE PAINTING.

ON THE MODE OF COMMENCING AND CONDUCTING A PICTURE.

There is no *exact* system upon which a landscape should be painted, for results equally good arise from various modes of proceeding.

There are, however, certain rules which must, in a greater or less degree, be observed; and in detailing these rules a mode of proceeding is selected, which is not only easiest to the beginner, but practised by some of the best landscape painters of the present day.

First select a canvas of a moderate size — 18 inches by 12. Larger sizes are difficult and unmanageable in the finishing; smaller ones are apt to engender a petty and confined style of work.

Now place the easel so that the light falls upon the canvas from above and from the left. Cover the lower portion of your window with green baize. A room with a north light is best, being most steady.

The selection of the canvas, with a light or cream-colored ground, being made, let the design be drawn upon it with a firm, well-defined outline. For this purpose much time can be saved, and a good effect produced, by judicious employment of water colors; a method now common, and extensively recognized.

The difficulty of making the water color adhere to the oil ground may be overcome by mixing a little ox-gall in the water used for the color. This done, tint the lower part of the canvas in a clear warm tone, with a mixture of Yellow Ochre and Venetian Red, or with a pale hue of Burnt Sienna, in water color. The upper or sky part of the canvas being left clear, commence the work lightly about where the horizon will appear, and gradually strengthen the tint as you descend.

The tint so laid being quite dry, sketch accurately with washes of Burnt Umber or Vandyke Brown, in water color, all the objects of your design, marking more particularly, with some degree of finish, the figures and foreground details. These brown shadows, when worked over with semi-opaque greys, or with other colors, whether transparent or semi-transparent, give to the foreground and middle-distance a certain richness.

The sketch being thus laid in, the systematic painting of the picture may now be commenced.

The different portions of the work, in its progress, we will designate, as a *first*, a *second*, and a *third* painting; the *first* painting consisting of the early or dead coloring; the *second* being that in which the subject is brought forward to receive the finishing work, which work constitutes the *third* painting.

It may be observed, that the landscape painter cannot *rigidly* adhere to this division, which may be followed out by the portrait painter.

THE FIRST PAINTING.

Have near your easel a slab of ground glass, on which prepare your tints to a proper hue and consistency before they are transferred to the palette; and bear in mind that a large number of tints cannot be managed with the same ease as a smaller one.

A set of tints for the sky and for the distances is now mixed; and you commence with the blue of the sky, working downwards, and securing a proper gradation of color; then follow the distances, mountains, etc. The same tints are employed throughout this part of the work, only somewhat strengthened by deeper gray tones, which, in the after-paintings, are gradually abandoned for the local colors of the foreground. The sky and the distance being thus laid in, the work is left to dry.

Apply the color chiefly by touches or pats of the brush, in succession, from left to right, beginning at the left upper angle of the picture, and laying the color in nearly of the same thickness throughout.

The color should be tempered with a proper quantity of vehicle, that it may work crisply and pleasantly; and, laid sparingly upon the canvas. Short-haired brushes are best adapted for painting with little color.

In laying on, or "impasting" the lights, the brushes should be rather longer than those used for the general painting: because such a brush will be found to yield the color more readily.

In the first painting, the lights are laid on with a moderate quantity of color, the shadows being put in more thinly. Let all the tints be introduced in a firm and clear manner; for, by laying them on in this firm way, you prevent a turbid or muddy appearance. Having mixed a well-ordered set of tints, place every color at once, as nearly as possible, where it is to remain.

THE SECOND PAINTING.

When the first painting is dry, the picture should have a damp cloth passed over its surface. Being then wiped dry, let it be rubbed over with a small portion of poppy oil, for this makes the after-painting

unite with the first. It is a mere moistening of the surface that is required. All surplus must be removed by the moderate application of a piece of silk or soft linen.

In the second painting, we give more attention to the characteristic details of the various objects. Their drawing, light and shade, reflected hues, and varieties of tints in coloring, are more elaborately made out; the relative distances of objects from the eye are most carefully preserved; and the shadows, being still painted thinly and transparently, are carefully united (where it is necessary to unite them) with half tints, so as to produce roundness or solidity. A great body of color is laid on the lights, which are also now pencilled with great attention to character and sharpness; and the touches on the high lights are put in with firmness and precision.

The badger-hair softener is now to be used, but cautiously and sparingly, to unite and soften the tints into each other, and to reduce the surface to a level, by removing the marks of the brush.

Let the early paintings be of a light and rather brilliant style of color; for, in finishing, it is scarcely possible to prevent the brighter colors from being cooled down and subdued. Avoid the early introduction of much cool color, which can be conveniently and effectually added as the picture advances towards completion. Strong tones and shadows should not be laid in with too much power and depth, but something should rather be left to the deepening effect of time.

Thus it will be understood how the second painting should give us a tolerably finished effect ere we proceed to the final or *third* painting.

THE THIRD PAINTING.

The third or finishing painting is commenced by wiping and oiling the picture in the same manner as for the second painting. We then proceed to complete those details of form and color which were brought forward in the former paintings — employing, for this purpose, delicate touches or glazing and scumbling alternately; not to conceal but to improve, and to render as perfect as possible, what has been already done. Sharp vigorous touches are now to be given, where the markings of the details require them, and where there may be either too great a softness or an obvious want of character and transparency. These isolated touches must be made with freedom and de-

cision, or they fail in producing the desired effect. They should be of a warm tone — and the tints used for this purpose may be, as occasion may require, either lighter or darker than the parts to which they are applied. Smaller brushes are used in effecting this object.

In this stage of the work, do not attempt too much at one sitting, as, by proceeding too far, the tints laid by scumbling and glazing interfere with each other; and the eye, by coming more frequently to this important duty of judging the work, is better capable of seeing where the necessary touches are most required. It is best to allow the colors to dry gently, and to repeat the operation when necessary.

Lastly: a mode of aiding the finish is, by passing over a portion of the work with light delicate tones, which are left only on the projecting touches of texture objects.

This operation must be done carefully and dexterously, with a light hand, holding the brush so loosely as to permit the somewhat thick color, with which the brush is charged, to adhere partially to those projecting points of the picture with which the hair thus gently comes in contact. This manipulation is called “dragging” or “dry touching;” but the greatest care must be taken not to carry it too far, else it will deteriorate the work by producing what may be characterised as “mealiness;” that is, the colors will appear as if they had been sprinkled with meal, or covered with a white dust, which makes them look dull and faded, both in the lights and in the shadows.

COLORS AND TINTS FOR DIFFERENT PARTS OF A PICTURE.

THE SKY.

In the preparation of sky tints, it is to be observed that they are graduated in intensity by a greater or less quantity of white; and in laying them on, we place the strongest of them at the highest part of the sky, making them paler and less intense as we descend towards the horizon, where the use of blue in the tint is discontinued, and other tints are used suitable to the character of the picture and to the time of day under which it is seen.

In order to preserve the ærial aspect of the sky, it should not be painted with too many colors. The sky palette should be simple —

the colors few ; but let there be as many *gradations* of those colors as possible.

Paint the sky in at once ; but if two paintings be necessary, the first should be, in tone, lighter than the sky is intended to be at the second or finishing painting.

The most useful colors for painting skies are,—

French Ultramarine,
Vermilion,
Indian Red,
Madder Lake,
Aureolin,
Yellow Ochre,
Naples Yellow,
Raw Umber,

the necessary gradation of them being produced by an admixture of white.

The necessary tints are,—

Aureolin and White ;
Naples Yellow and White ;
Yellow Ochre and White ;
Vermilion, Naples Yellow, and White ;
Madder Lake, Aureolin, and White ;
Madder Lake, Naples Yellow, and White ;
Vermilion, Yellow Ochre, and White ;
Indian Red, Yellow Ochre, and White ;
Madder Lake, Yellow Ochre, and White ;

the proper gradation in each being produced by a greater or less admixture of white as before.

CLOUDS.

For the painting of Clouds the following colors are necessary :—

Cobalt, Aureolin, and White ;
French Blue, Vermilion, and White ;
French Blue, Indian Red, and White ;
French Blue, Raw Umber, and White ;
French Blue, Raw Umber, Naples Yellow, and White.

In clear evening skies the following tints are found to be of great service : —

Madder Lake, Aureolin, and White;
 Madder Lake, Light Red, and White;
 Madder Lake, Light Red, Yellow Ochre, and White.

Light Clouds are painted over the azure ground with little color only. Violet greys, which are chiefly required for this purpose, are composed, in varying proportions, of —

French Blue, Light Red, and White;
 French Blue, Light Red, Madder Lake, and White;
 French Blue, Light Red, Yellow Ochre, and White;
 French Blue, Light Red, Aureolin, and White.

If the tone is required to be very bright and pure, use Vermilion in place of Light Red; if, on the contrary, the tone is to be more sombre, Indian Red should be employed in the place of Light Red.

In order to give solidity and brightness to the high lights of the clouds, these lights must be laid on with stiff color, having but little vehicle in it.

Generally speaking, the clouds may be painted on the sky, while it is yet wet; and they may thus be united with it, by having their edges a little softened. But where the *lights* of the clouds are to be made with sharp well-defined edges, these lights may be best produced by being placed in when the first flat painting is quite dry.

DISTANCES.

The *sky line* is the boundary between the horizon and the sky. In order to procure the truth and the solidity (so to speak) of Nature, it is of the first consequence that this boundary be marked in a manner so far free from indistinctness and from confusion with the sky, as to preserve a good general shape. In fact, it is often the strongest line in the picture.

Distances are painted with the same tints as those used in the sky, somewhat strengthened, however, by deeper grey tones.

Distant mountains or high lands will often have their summits well defined, even by colors as well as by lights and shadows, when their bases are not visible. This is occasioned by the mists and vapors which are constantly exhaled from the lower portions of the ground; for which reason the distant summits must obviously be more clearly

marked out than the bases, even though the latter be considerably nearer to the eye.

All distant objects, lying immediately under the effect of a clear sky, will have in their hues a portion of the azure or other tints of the sky; and hence, distances are generally laid in with the sky tints modified, as we remarked before, to the occasion in hand.

They should be treated broadly, *i. e.*, without much detail, and with masses of light and shadow. Each, of course, being modified by the degree of remoteness in the objects, as well as by the supposed state of the atmosphere, and the time of day.

MIDDLE DISTANCES.

As the objects advance towards the foreground, a little more distinctness of color may be given; but it must rarely be stronger than that which black, white and yellow ochre will produce; or a delicate grey and Naples yellow; and a little warm color may be interspersed, either in the buildings or in the objects which may require such a variety.

It is of the first importance to make the middle distance, in color and in the nature of its objects, of such a character as will lead the eye agreeably and imperceptibly from the third distance to the foreground.

The colors used for middle distances, are —

Terre Verte,	Naples Yellow,
Vermilion,	Yellow Ochre,
Indian Red,	Light Red,
Lake,	Madder Brown,
Prussian Blue,	Raw Sienna,
French Ultramarine,	Burnt Sienna.

The tints for middle distances are made by a graduated admixture of —

White	with French Ultramarine and Vermilion;
"	French Ultramarine and Light Red;
"	Terre Verte and Light Red;
"	Terre Verte and Vermilion;
"	Terre Verte and Indian Red;
"	Terre Verte and Lake;
"	Terre Verte and Brown Madder;

White with Terre Verte and Prussian Blue;
 “ Indian Red;
 “ Vermilion.

All these tints are for the production of warmth, and are to be enriched by yellows, or to be glazed. When you mix a tint, mix red and white only, and add the yellow afterwards; which less disturbs the transparency of the tint.

TREES.

It is of the first importance in painting to represent and distinguish the different varieties of trees; and this is done rather by the nature of their branching — their general sway, as it were — than by their color and leafing.

When near the eye, the masses of the foliage, as well as the general hue and tone of the verdure, should be carefully studied and observed; and these are to be truthfully depicted, not by marking out the shape of each leaf, but by a peculiar touch and handling, which at once informs the eye to what family the trees belong, willows, or oak, or sycamore, for instance.

In the middle distance, the greens of the land and trees must gradually partake of the ærial tone of the third distance, in proportion as the objects recede towards the horizon. Yet it is well not to neglect those accidental touches of the sun's rays, which give such important aid to the painter, by separating the various divisions and breaking the monotony of the landscape. These bright spots of light should be slightly golden, yet of a very subdued character compared with similar effects in the foreground.

Having thus observed the proper color, lay the foliage in irregular blots, with a brush filled with plenty of color freely mixed with megilp; the copious use of this vehicle imparts a rich pulpy appearance to the work. Then take a small sable pencil, and mark out and form these irregular blots into a more defined shape and variety of touch.

Painting into the depths of the shadows, with decided dark touches, prevents the whole from being flat and heavy. It is necessary also to paint into the retiring, *i. e.*, the more distant portions, while yet wet, with more delicate opaque tints; for this not only takes off the effect

of too much sameness, but gives greater relief to the advancing branches.

If you wish to give the appearance of light shining either through any particular branch or foliage or upon it, paint such parts in the first instance in high relief; and when dry glaze over them with a brighter color, such as Yellow Lake in combination with Prussian Blue; but do not, in the first painting, make your trees of a fine green; depend rather, for the proper effect, upon repeated glazings and touchings afterwards into the masses, with delicate grey and green tones.

For greens in shadow there is no need of blue; they may be formed of a mixture of black and different yellows; the olive-toned greens thus produced are soft and very harmonious for shadows.

Should you wish the tint to partake of a light greyish cast (as in the case of willows in shadow), use Black, Naples Yellow, and White. If a yellow-reddish tint be needed for these dull greens, let the yellow predominate; but if the verdant part you are painting be now so far back in the perspective that the violet grey-blue tint, peculiar to the distances, begins to take an ærial tone, then use French Blue.

In painting trees, it will be necessary to make the extremities of the branches more tender in color than the middle parts; and by letting the light be seen through various portions, great thinness and beauty may be attained, and thus that solidity and heaviness avoided, which are so unpleasant to the eye.

Stems and Trunks of Trees.— Having painted the stems in with a grey color as near to Nature in tint as may be practicable, take your pencil, and, with its upper end cut to a fine point, draw the details in through the color while yet wet. When the whole is dry, glaze over those details nearest to you with an admixture of a little Black and Burnt Sienna, and wipe it partially off, so that a portion may remain in the crevices. On the other hand, scumble over the distant stems, as well as the retiring parts of the nearer ones, with a little pearly grey, causing them to melt in with the surrounding background. For their foliage, when they have any, touch it in with Prussian Blue and Ochre for the dark leaves, and with Terre Verte and Naples Yellow for the lights, using a finely pointed sable to give the character of the leaves, and gradually throwing them into a mass as they retire.

The following mechanical processes are frequently resorted to, to produce a representation of foliage.

An old worn hog-hair tool, having scanty hairs, and those of irregular length, is employed. Such a brush leaves a jagged, varying busy touch.

Sometimes the brush is crushed perpendicularly and flat upon the color of the palette. This causes the hair to diverge irregularly from the tie or ferrule; and, the points of the hair being thus charged with color, the brush is held loosely between the thumb and finger, and the points of the hair touched upon, or rather jerked against the work. The irregular scratchy-looking foliage, thus produced, is touched and worked, while it remains wet, with small hog-tools or sables.

Color is laid in for grass by lightly touching the canvas, and jerking or flicking the brush upwards so as to produce a free and natural representation of irregular blades of herbage. For long straggling stalks of grass, or for weeds, a finely-pointed sable is used in a similar manner.

FOREGROUNDS.

In preparing the palette for foregrounds, add the following colors to those already employed:—

Yellow Lake,
Lemon Yellow,
Madder Brown,
Venetian Red,
Brown Ochre.

Some of these must be sparingly used, or else they may prove too brilliant.

In commencing with the foreground, use the end of a hog-hair tool, well filled with megilp and color (either Burnt Sienna and Prussian Blue, or Ochre and Blue), and lay in the several masses in strength as they may respectively require; and, having thus got their general form and breadth, proceed to make out the details with a finely-pointed sable, using Raw Sienna and Blue in the tints, and Naples Yellow and Blue for the lights.

Now proceed with the finish and detail, by marking out weeds and creepers, which give such charming richness and variety to the picture;

such as the wild convolvulus, and the like, with here and there a blackberry branch jutting out into high relief.

When all these objects are to be introduced, it will be necessary to flatten the ground behind them, in order that they may receive both sharpness and finish when painted.

In working up the foreground, do not elaborate the plants or foliage so minutely as to make them appear studied, and so cause them to interfere with the other parts of the picture.

Vegetation should not be colored too green, that is, with a raw color of blue and yellow; but by uniting a red (such as Lake) or orange (such as Burnt Sienna) with the greens, you impart to them a more subdued and sombre, or autumnal hue; for nothing is more offensive than too coarse and raw a green. In fact, distinguish carefully between a *glaring* and a *glowing* color — between what is vulgarly *staring* and what is *rich*.

In painting banks, do not neglect to give force and foreground character to them as they approach the eye, by means of stems, and the reflections of the trees in water; but independently of this, aim at a greater minuteness of detail and richness of color, and make much of hedges and reeds, which tend to soften the abrupt harshness of the stems of the trees.

In painting water, whether in a state of motion or of stillness, it is often made too light for its surrounding banks; and thus painted it throws the whole picture out of harmony. Nothing, however, is more conducive to the harmony and completeness of a picture than the representation of water, either as a winding or a falling stream, or as a still lake. It enables the artist to repeat the various forms by reflections of them in the water, or to unite the sky with the lower parts of the landscape, leading down the light.

As an example of the nature of tint and color in water, it may be stated that water in shadow is often of a brown color, as when the current has had its course through a long tract of moss. This is the appearance which the rivers in northern Wisconsin often exhibit.

Lastly: the distance must to a certain degree melt into the horizon. Thus every part of the picture requires to be more distinctly made out as it comes forward; and the foreground must not only be well detailed,

but highly enriched with plants and various shrubs, and the ground itself finely broken.

The soft vacuity of the distance will contribute to increase the effect ; and a well-disposed group of figures or of cattle will add to the reality as well as to the beauty of the scene.

CHAPTER II.

FLOWER PAINTING IN OILS.

THE IMITATION OF OBJECTS OF STILL LIFE.

Presuming that good studies have already been made from casts, the student is nearly ready to begin to paint directly from Nature. But before commencing to paint either flowers or foliage, it is still better to spend a little time in painting a few stationary objects. This is best done from shells, pottery, a group of books, stuffed animals, drapery, &c., &c. These objects should be imitated in the most minute manner possible, not for their own sake so much as to gain experience before going to Nature.

THE HABIT OF CONTINUOUS WORK.

In carrying out the advice offered, the habit of close and continuous application for several hours together must be formed; and, consistent with thoroughness in the work, the utmost speed should be aimed at. This experience will be found most valuable when copying Nature; indeed, without sufficient speed, all work from natural flowers will be defective.

To paint a rose properly often takes from seven to nine hours' continuous work, and no idea must be entertained of beginning a flower on one day and finishing it the next. Flower Painting, in this respect, is unlike every other branch of pictorial art. The objects are constantly moving, and cannot be re-arranged.

Mere sketches or translations, or "impressions" of Nature, may be executed in a very short time; but works of this character ought not to find favor with the student, or influence him at first.

In order to obtain the likeness of a flower before it changes its position, it is best to mix the required tints in imitation of the object before commencing to paint.

THE MATERIALS NECESSARY FOR PAINTING IN OIL.

The requisite materials for flower painting in oil colors are :

A small easel and mahl stick, with a palette of light-colored wood, and of medium size. On the palette at the far side, and near the left hand, three or four dippers must be placed. They should contain raw linseed and poppy oil, copal varnish, and oil of lavender. The linseed and poppy oil are for the purpose of thinning colors when required, but which should always be employed thickly, rather than otherwise. The copal varnish is necessary to assist the colors to dry when needed, and must be diluted occasionally with the oil of lavender when it becomes too thick for use. The oil of lavender may also be used to thin colors in combination with either linseed or poppy oil.

The brushes, for the most part, should be round red sable, especially for the edges of leaves and flowers; but an effort must be made to cultivate the general use of the hog-tool, so that ultimately it may as much as possible take the place of the sable brush.

All colors must be arranged on the outer edge of the palette, with the exception of White, which must occupy the middle.

The following list is a full one, and will serve all purposes for future work :

WHITES.

Flake White.

Zinc White.

YELLOWS AND ORANGES.

Cadmium Yellow (to glaze over Zinc White).

Raw Sienna.

Cadmium Orange.

Aureolin.

Yellow Carmine.*

Burnt Sienna (to glaze over Flake White).

Yellow Ochre.

Orange Vermilion.

Orient Yellow (for studies which will not be exposed to light).

Yellow Carmine and Rose Madder in Combination.

REDS.

Chinese Vermilion.

Indian Red.

Vermilion.

Rose Madder.

Field's Extract of Vermilion.

Pink Madder.

Scarlet Vermilion.

Extract of Madder Carmine.

Light Red.

Crimson Lake (for studies only).

* Yellow Carmine is frequently called Yellow Madder, and sold as such.

BLUES.

Genuine Ultramarine (in powder).
 Ultramarine Ash.
 French Ultramarine.
 Cobalt.

Prussian Blue, used in combination with
 other colors for Dark Green (for
 studies only).
 Cerulean Blue.

GREENS.

Opaque Green Oxide of Chromium.
 Terre Verte.

Transparent Green Oxide of Chromium.
 Viridian.

With the Greens named, all shades and varieties may be made by combining with them Yellows, Blues, and some of the Yellow Browns, according to the hue required. Tints of Green are formed in endless variety by adding White to the above combinations. Very useful varieties of Green may also be formed by the lighter Cadmiums and Blue Black, broken with Zinc White into the required tints.

PURPLES.

Purple Madder.

Rose Madder in combination with either Genuine Ultramarine, French Ultramarine, or Cobalt Blue.

The above colors glazed over Zinc White will produce fine purples, varying from pink to bluish hues. Opaque purple tints may be made by adding Zinc White to the colors named.

BROWNS AND BLACKS.

Vandyke Brown.
 Raw Umber.
 Burnt Umber.
 Sepia.

Brown Pink for studies, and when kept
 from a powerful light.
 Brown Madder.

Burnt Sienna; this color is valuable
 when used with other Browns, Blacks,
 Blues, or Greens, but it imparts an
 opaque quality to transparent colors.
 Blue Black.
 Ivory Black.

MIXTURE OF TINTS.

All tints should be composed of the fewest colors possible. No bright colors should enter into dull tints; but they should be produced either from Blue or Ivory Black, and reduced by Flake or Zinc White, according to the depth required.

PRELIMINARY PRACTICE IN FOLIAGE.

A small bunch of rhododendron leaves will make a good subject, because it will be little liable to move for several hours together. It

should be placed in a vase or glass vessel, of pleasant shape and color, as this also may form a part of the study for imitation. If the leaves be of young growth, the tints must be mixed as follows, and before beginning to work:

Opaque Green Oxide of
Chromium.
Cadmium Yellow.

Cobalt Blue.
Blue Black,
Yellow Ochre.

These colors must be broken into tints more or less with Zinc White, beginning with the Yellow Greens, both light and dark, and ending in tints composed of Blue Black and White.

A little Raw Umber may be mixed with Viridian, for the darkest shadows. Most likely the White will be too thick for use when squeezed from the tube, a little poppy oil may then be added. In winter time oil of spike lavender should be mixed with the oil.

Should the leaves be old, the same colors may be used with more Cobalt Blue and Blue Black added. Any accident or decayed part in the leaves which may be present must also be copied; and Light Red and some of the Yellows will usually be found sufficient to do this, with an addition of some of the colors already referred to.

The study should be made on a dark grey ground, and must be carefully drawn before beginning to paint. Grey millboard is an excellent material to make studies upon. When a canvas or any other material is used the grey ground should be prepared upon it beforehand, and it must be quite dry previously to being worked on. A ground of the same color must also be placed behind the foliage itself, so that the true color of the leaves may be the better ascertained.

ORANGE AND BROWN FLOWERS.—THE WALLFLOWER.

The common wallflower with its foliage may next form the subject for imitation; as it will remain without moving for many hours together, and may be easily obtained when in season. The background should be the same as before. Yellow and Orange Cadmiums will serve for the yellows in the lighter parts of the flower; and the darker parts can be imitated with Rose Madder, Brown Madder, Vandyke Brown, Yellow Ochre, Blue Black, and Burnt Sienna. The addition of Zinc White will sometimes be necessary in the formation of greys.

The foliage may be copied with the two Oxides of Chromium, Raw Sienna, Blue Black, Cobalt Blue, and White, with perhaps a little of the lighter Cadmiums. Here, again, the vase which contains the flower should be carefully copied.

PINK FLOWERS.—THE PRIMROSE.

A pink primrose growing in a pot should next be procured for another study, as this plant is also stationary for a long time together.



THE PRIMROSE.

But the color of the flower will require more careful consideration than was necessary with the wallflower. The ground on which it is intended to be painted must be perfectly white.

The forms of the flowers must be carefully sketched with Rose Madder, and, inasmuch as the tints of the plant cannot be imitated with opaque color, a combination of Pink Madder and Cobalt should be used for the purpose. This must be glazed on the top of the white ground, making the tints redder or purpler, in accordance with the color required. In some parts of the flower opaque color may be employed, and the two colors alluded to, with Zinc White, will supply this. A little copal varnish should be mixed with the transparent color; and, when it becomes sticky, and too thick for pleasant work, it should be thinned with oil of lavender. The yellow centres of the flower will be matched with the paler Cadmium.

The leaves of the plant may be imitated with the Greens already enumerated, with more or less Yellow and White added as required. The overlapping of the leaves will now present new difficulties for imitation, and the darkest shadows must not be made too green — of this there is always danger at first with the student. The greens in dark situations nearly always partake of a brown hue.

The pot in which the plant may be growing should also be copied.

BLUE FLOWERS.—THE GENTIAN.

The ground for the gentian must be pure White, and the local color of the flower must be glazed over it, using Ultramarine and Cobalt Blues, in combination and separately, the white underground showing through to give brilliancy.

The deep shadows of the flower may be made by exhausting the full strength of the Ultramarine, adding Purple Madder, and sometimes a little Ivory Black. The lighter parts of the flower, as well as the transmitted lights, will be best imitated by glazing over the White ground with the pure Blue color. White in combination with Blue must be avoided when a pure color is required, as the quality of the Blue entirely changes by the addition of White. When Blue Greys are needed, White may then be mixed with one of the Blues named. A greenish tint will often be seen near the centre of the flower, which may be produced by Opaque Green Oxide of Chromium, and White.

The foliage will easily be imitated with the Oxides of Chromium, one of the Yellows, and White; and in the deep shadows Ultramarine Blue and Yellow Carmine will be found useful.

In the deepest recesses of the foliage of most plants Vandyke Brown should be used. For the shadow parts of deep red flowers it is of much value.

It may here be remarked that Vandyke Brown must never be used with opaque color, much less in combination with White. It must be employed either alone, in full body, or as a glazing color in admixture with other transparent colors. For the purpose of giving richness and depth to the deepest parts of a dark background it is, in intelligent hands, a perfect pigment, and is quite durable.

When Blue Flowers verge more or less into purple, Rose Madder may be added, according to the tint required.

RED FLOWERS.—THE SCARLET POPPY.

A scarlet poppy may furnish the next object for study. This flower changes rapidly as soon as it is gathered. It is therefore desirable to make preparations as to materials, &c., before the flower is brought into the painting room.

The following colors will be found necessary :

Orange Vermilion.
Extract of Vermilion.
Chinese Vermilion.

Rose Madder.
Purple Madder.
Madder Carmine.

Zinc White must be used to lighten certain colors with, and the Orange Cadmium to give reflected and transmitted lights.

The dark patches of color often found at the bottom of the petals of the poppy, and the stamens, can be imitated with Purple Madder and Cobalt, or French Blue in combination; sometimes a little White and Blue Black may be added. The light sheeny gloss may be produced with Blue Black, Rose Madder, or ordinary Vermilion, and White.

The foliage of the poppy is quite as attractive as the flower itself, while their harmony and contrast with each other are perfection. It is exceedingly difficult to paint, for immediately it is cut, it not only begins to change in its smaller parts, but in a much shorter time than is necessary to copy it, it sometimes fades altogether, and cannot be revived.

All other red flowers near in color to red poppies may be imitated by the pigments recommended.

YELLOW FLOWERS.—THE DAFFODIL.

The following colors are necessary for painting the daffodil with its foliage:

Lemon Cadmium, used pure.	Raw Umber.
Cadmium Yellow.	Blue Black.
Orange and Deep Orange Cadmium	Opaque and Transparent Green Oxide of Chromium.
Yellow Ochre.	Cobalt Blue.
Yellow Carmine.	Zinc White.
Light Red.	Flake White.

After the bloom is fully opened, the daffodil will remain without moving for twelve or fifteen hours together. This will allow of its being outlined carefully, which must be done with Pale Cadmium, before beginning to paint it. The ground must be quite white and dense. The outer petals of the flower should be imitated with Yellow Cadmium, glazed thinly over the ground.

No pigment will match the brightest lights but Lemon Cadmium; this is, however, somewhat unsafe as to permanency, and should be used quite pure and very sparingly. The rest of the bright tints of the daffodil can be imitated with the deeper Cadmiums, which are all permanent when well prepared. The shadows of the flowers will be produced with Yellow Ochre, Yellow Carmine, Raw Umber, and Blue Black, all combined with Zinc White for the tints required. The deepest recesses should be touched in with the darkest Cadmiums and Light Red. The foliage may be painted with combinations of Greens, produced with Opaque and Transparent Green Oxides of Chromium, Blue Black, and Cobalt Blue, with some of the Yellows named, and broken into tints with Flake White. The darkest shadows of the leaves must be painted with Transparent Oxide of Chromium, Yellow Carmine, and Vandyke Brown combined.

The daffodil should be put into a light blue root-glass, three parts filled with water; and the wild hyacinth may be placed with it, for the sake of contrast, and the whole painted together.

Although the ground immediately under the flowers must be pure

white, a dark ground in imitation of some object should be picked in between, as the work progresses. All other yellow flowers may be represented with the colors indicated.

RED AND PINK ROSES.

The following colors are necessary for painting a red or pink rose:

Rose Madder.	Cadmium Yellow.
Pink Madder.	Blue Black.
Madder Carmine.	Cobalt Blue.
Purple Madder.	Yellow Ochre.
Brown Madder.	Zinc White.
Vermilion.	

The ground must be pure white, and the Madders being mixed with copal varnish, must be glazed over it of the thickness necessary to obtain the brightest hues.

Tints should also be formed by the admixture of Zinc White with the brightest Madders. But on no account should Flake White be used with them; and whenever the necessary tint can be obtained by glazing the pure color over the white ground, this should be done; as all the Madders have a tendency to change when in combination with an opaque pigment. Sometimes the pink tints of a rose can be nearly obtained with the deepest Vermilion and Flake or Zinc White, and when this can be done, it is better than using the Madders in combination with White for the purpose. The tints produced by Vermilion and White may not be altogether satisfactory, but they will be found permanent; while those produced from Madders and Zinc White will most likely change in a little time.

For the greys of a pink rose use Blue Black and White. An addition of Cobalt Blue, to the Vermilion referred to, may occasionally be necessary.

To imitate the deeper colored roses, the Vermilions and the Madders should be used without White. It is often best, first to color the underground with Vermilion and White, in accordance with the depth of the flowers intended to be painted, and allow to dry.

Yellow and even green tints will be found in many red and pink roses, which may be made by the Yellow Cadmium, Cobalt Blue, and White. To imitate yellow roses, such as the Gloire de Dijon, and the

Marshal Neil, does not require the use of the Madders. The Vermilions, with the Cadmiums, Yellow Ochre, and Zinc White, are sufficient for the Gloire de Dijon, and the same colors, with the Vermilion absent, will serve for the imitation of the Marshal Neil. The green



THE ROSE.

tints to be seen in these flowers may be matched by the addition of Cobalt Blue and Blue Black. Opaque Green Oxide of Chromium, with Flake White added, will also be found useful in the formation of

light green tints. With regard to the color of the leaves of most flowers, the use of both the Opaque and Transparent Green Oxides of Chromium is indispensable. These two pigments employed in combination with the Cadmiums, Yellow Ochre, Raw and Burnt Sienna, and some of the Browns, with the addition of Flake White for the lighter greens, will supply a great variety of valuable hues.

Viridian and Cerulean Blue are also very useful in obtaining the brighter and bluer greens; and combined with Yellow Carmine they furnish charming qualities of green hues, and are fairly permanent.

For the glossy surface of leaves, a mixture of Blue Black and White is nearly sufficient. An addition of the Greens mixed for the local color of the leaves may sometimes be requisite. Blue Black, White, and Opaque Green Oxide of Chromium, varying the quantity of each color, give a beautiful variety of hues for foliage, which are not only true to Nature, but perfectly permanent.

WHITE ROSES.

For painting white roses the following colors are necessary:

Flake White.
Yellow Ochre.
Cadmium Yellow.

Raw Umber.
Blue Black.
Ivory Black.

After the Flake White has been brought to a proper consistency with poppy oil, the tints should be formed as follows:

Three tints varying in depth, made with Raw Umber, Blue Black, and White. Three tints made with Yellow Ochre, Blue Black, and White. Three very light tints made with Ivory Black, Cadmium Yellow, and White. One tint for the brightest lights, made with Zinc White slightly tinted with Cadmium Yellow.

A white ground should be adopted. The centre of the flower in light, if seen in front, should be first outlined with one of the light grey tints. The outline and the painting of the rose should proceed together, as it is likely the flower may move rapidly. Every part must be finished as the work progresses, until the outer edge of the rose is reached. The work should then be looked over, when perhaps corrections can be made before the flower entirely changes its position. This will be sufficient for one day's work. The next day a rose in

shadow must be painted with the darkest tints alluded to, making what changes in them may be necessary in imitation of the flower. It is always desirable to mix fresh tints for each day's work, for it is no real economy to work with colors mixed the day previous, as they would probably be half dry.

The foliage must now be added to the flowers, and this will most likely occupy another day to finish properly. The background must be painted in between the forms, as in the previous studies, and of a color and depth suited to the subject.

THE BEST GROUNDS FOR FLOWER PAINTINGS.

Grounds made with Flake White in full body are the best for flower pictures.

All the works by the old masters which are now in the most perfect state of preservation were painted either on white or very light grounds.

OPPOSITION OF LIGHT AND DARK.

It is often desirable to bring the brightest lights in a painting in opposition to the greatest dark, but the dark need not necessarily be large. No work in which this treatment is duly observed can be either insipid or weak. At the same time it requires caution and experience to do this with proper effect, or the result will be hardness and artificiality. One side of a white or light flower in the front of a picture may be immediately opposed to a dark one, or it may be contrasted by a dark part of the background. But it should be observed that a small portion only, on one side of the chief light, may be treated in the manner described, or the effect will be a spot.

In matters of this kind, a correct eye and judgment, arising from the necessary experience, will alone indicate what may be desirable on this head; but great facility will be afforded by the study of good pictures of any kind.

COMPOSITION OF LINES, ETC.

After a sufficiently large mass of light has been arranged in a flower picture, its form and direction should be assisted by pleasantly composed lines, to which the stems of the flowers and their foliage will

often contribute. In flower paintings, as in all other subjects, the chief lines of the composition should be visible, and contrasted by others less conspicuous.

A degree of elegance should always be sought in composing a painting of flowers, but ornamental conventionality should be carefully avoided; it is, however, an error of the commonest occurrence. Composition of line is of the first importance, but immediately it becomes too manifest and obtrusive, to the same extent it is objectionable.

The ordinary flower groups in vases are of the type of arrangements to be avoided. They are usually very weak, as well as worn out by repetition.

THE STUDY OF THE CHARACTER OF PLANTS, BOTH IN FLOWERS AND THEIR FOLIAGE.

Great pains must be taken to give the true character of flowers in combination with their foliage.

Careful drawings in black and white chalk should be constantly made on tinted paper, showing the peculiar growth and structure of plants. By such efforts alone will the student become imbued with a true feeling for the natural forms of flowers and foliage.

It is not alone sufficient to paint an imitation of a flower and its foliage piecemeal, as the whole of the natural growth and characteristics of the plant generally should be brought out and well expressed whenever it is possible to do this.

The flower of a poppy, for example, may have been represented very truthfully in a picture, but if the general growth and character of the plant is absent, its chief beauty and charm will be wanting.

No doubt it will sometimes be found difficult to accomplish this when painting a group of mixed flowers. In such a case it will be best to make out the secondary masses of light with well-developed stems and leaves of the principal flower or flowers composing the group, and the same kind of foliage may also be repeated in the background of the work.

GARISHNESS IN A FLOWER PAINTING.

Garishness and commonness must be avoided at any sacrifice in a flower picture. Too many bright-colored flowers in light will produce these effects when not supported by sufficient half tint and shadow.

The same kind of flowers which are painted in light should be repeated in half tint, and sometimes in shadow. When due sacrifice is made in a work by the introduction of a proper amount of half tint, the result, in skilful hands, will be refinement and interest instead of the qualities above alluded to.

The front flowers in a picture, which must always be very light in color when not white, ought not to be too much cut out from the surrounding parts, so as to form a spot of light. The general breadth of a work must ever be considered from first to last.

To add light to light, and dark to dark, is a golden rule in painting, and its effects are seen in good pictures of any subject.

Flower painting by many has been looked upon as easy of acquisition. This is certainly a mistake, and we have only to turn to the work of an exhibition room for proof to the contrary. At best, they are mere imitative studies, indicating no knowledge of art beyond this. Doubtless imitative skill is of the first importance in paintings of this description, but this is only one of the qualifications which ought to be possessed by the flower painter. Composition, light and shade, and color are all quite as essential for a true and complete work of art; and whichever of these qualities is absent from a flower picture, it is, at least in that particular, imperfect.

CHAPTER III.

LANDSCAPE PAINTING IN WATER COLORS

To prosecute the study of Landscape Painting in Water Colors successfully, the qualifications of industry and energy are certainly necessary. But however great may be the pains bestowed upon the attainment of this object, the results will be found so gratifying as to ensure the fullest and amplest reward to those pains.

The manufacture of all the materials used in this art is now so perfect, as to give an entirely new character to it; for the most varied effects are capable of being produced by them in subjects of every kind; and, in the branch to which we propose to introduce the student, there is no degree of excellence, as to truthfulness and power, which is not possible of attainment. The preliminary caution which we wish especially to impress upon the attention of the beginner is, that he should attach himself as little as possible to the particular style of any given master, and by making Nature his chief guide, should apply the general principles of art (which he will find detailed as clearly as it is in our power to detail them), to the formation of a style which he may call and feel to be his own; *his own*, because he will be able to account, in the management of his picture, for all its processes and effects, upon clear and acknowledged principles.

IMPLEMENTS AND MATERIALS.

The Implements and Materials used in Water Color Painting are few and simple. They are:

A few china tiles, saucers, or palettes;

A piece of very soft sponge;

An old silk handkerchief, and a piece of soft wash-leather for wiping out lights;

A moderately strong solution of gum arabic;

An eraser, or a sharp penknife;

A drawing-board;
Paper;
Brushes;
Colors.

Of these materials and implements, none need particular notice except the last three, of which we shall now proceed to speak at length.

PAPER.

The paper most generally used in Water Color Painting is what is called "Imperial" (size 30 in. by 21 in.); under which name the best and greatest varieties of textures, as well as of weight and thickness, can be obtained.

Paper is distinguished by its weight; but a still more important distinctive characteristic is the *texture* or *the grain of its surface*. This texture is greatly varied in different papers. For most drawings it is requisite that the surface should not be too rough; yet that it should have sufficient texture to take and retain the color. If it be too fine and smooth, there frequently results an unartistic flatness and a want of brilliancy in the work; if, on the contrary, it be too rough, the effect is often harsh and coarse, and the details of the picture cannot be executed with sufficient clearness and precision.

BRUSHES.

Brushes of brown sable are generally made by the insertion of the hair into quills; and hence the size of the brush is recognized by the various names of the quills employed, as Eagle; Swan, large size, middle size, small and extra small size; Goose, Duck, and Crow. The Eagle brush is very large and expensive, and is seldom used. The Duck and Crow sables are employed for delicate markings; as in branches, foliage, and architectural details.

Very pleasant and agreeable brushes are now made with German silver ferrules; heavier indeed than the quill brushes, but exquisitely made, and much employed for many purposes. They can be obtained of any size, from the smallest miniature to the largest Eagle size.

These ferrule brushes derive also much value from the circumstance that they admit of being made so effectively in a broad *flat* shape; and also from the circumstance that they cannot split, a common fault with those manufactured in quill.

For the working of the skies, a wide flat brush is employed. This is the best made of strong red sable for extensive and repeated washings.

A flat camel-hair brush in tin is a useful and necessary implement, not only for laying broad washes of color, but for damping the paper previously to the commencement and occasionally during the progress of the work, as well as for softening tints where they may be too hard and heavy.

COLORS.

In Water Color Paintings, as now practised, the colors are used in three forms—namely, dry cake colors, which are considered by a numerous class of artists to have certain advantages as regards purity of tone and perfection of wash; moist colors, placed in earthenware pans, and arranged in convenient tin sketching boxes; and colors put into collapsible metal tubes, like oil colors.

Of these forms the second is the most convenient and advantageous for the learner, and even for the advanced artist.

It may be observed that the tube colors are chiefly serviceable in large works, requiring a considerable body of color to be laid on in a short time.

The following catalogue of colors contains only those absolutely useful in Landscape Painting.

Real Ultramarine.—This brilliant blue is the purest in tint, and at the same time one of the most permanent pigments known. In skies and distances it affords a fine ærial azure.

Ultramarine Ash.—A delicate and extremely tender azure. It may be used for skies and distances, where tender azure greys are required.

French Blue.—A strong color and nearly transparent; it is useful either in figures, draperies, or landscape. It is permanent in water color.

Smalt.—A vivid and gorgeous blue; bright, deep, and transparent, bordering on the violet tint.

Cobalt Blue.—A pure light azure blue, nearly transparent; it washes well, and affords clear bright tints in skies and distances.

Prussian Blue.—A deep-toned brilliant blue, bordering slightly on green, a quality which militates against its use in skies and distances. The old water-color painters, however, used it for those parts of a

picture, with the addition of a small portion of Crimson Lake, to neutralize its green tint. Prussian Blue mixed with Light Red gives a sea-green neutral.

Antwerp Blue.—A deep transparent blue, well adapted for mixed greens.

Indigo.—Not a bright blue, although very clear in all its tints. With Indian Red it affords very clean purply shadows; and with either Gamboge, Raw Sienna, Roman Ochre, or Yellow Ochre, it gives clear, sober greens.

Gamboge.—A very lively and transparent yellow. In landscape it affords, with Indigo or Antwerp Blue, clear bright greens; and with Sepia a very useful sober tint.

Yellow Ochre.—This sober and useful yellow is generally employed in the distance and middle ground of a landscape; it possesses a slight degree of turbidness, and is esteemed for this property, which is considered to give it a retiring quality. It affords a fine range of quiet greens in its admixture with Antwerp Blue, or Indigo.

Roman Ochre is more transparent, and rather cooler than the above, forming with Antwerp Blue or Indigo an excellent range of greens.

Raw Sienna.—More transparent in its tint than any of the Ochres. It is much employed in landscape, on account of its being useful both in distance and in foreground; it gives bright sunny tints, and, with Antwerp Blue, very pure clear greens.

Cadmium Yellow.—A splendid glowing yellow. It is extremely brilliant and nearly transparent; invaluable for gorgeous sunsets.

Indian Yellow.—A rich intense yellow, particularly useful for draperies, and for compounding landscape greens.

Italian Pink.—A rich transparent yellow, affording a variety of beautiful foliage-tints, by admixture with Indigo and Sepia in various proportions. These three colors, with Burnt Sienna, will produce almost every variety of sunny foliage.

Yellow Lake.—Similar to Italian Pink, but a little cooler.

Chrome Yellow is of three tints—pale, deep, and orange. They are opaque colors of strong body, but are occasionally used in thin washes.

Mars Yellow.—A fine, warm and brilliant artificial ochre.

Lemon Yellow.—A very pale lively yellow, entirely free from the

slightest tinge of orange; it has not much power, and is semi-opaque. In distance its light wash is used with great effect for cool sunny greens, for which purpose a minute quantity of Emerald Green may be added to it. It is employed for points of extreme high light.

Gallstone.—A deep-toned gorgeous yellow; but cannot be depended on for permanency.

Naples Yellow.—A pale, semi-opaque but clear yellow.

Burnt Sienna.—A rich transparent brown orange. It yields fine olive greens by admixture with Antwerp Blue (or Indigo) and Yellow or Roman Ochre, Raw Sienna, or any other transparent yellow; these tints may also be saddened into fine olive neutrals by the addition of Sepia.

Mars Orange.—A very clear and beautiful orange, of the Burnt Sienna character, but without that tendency to brown which distinguishes the latter; it is consequently valuable in its pale wash for bright sunny tints, and is unequalled for clearness of tone.

Brown Ochre.—A dense, deep-toned, brownish-yellow, useful in sandy foregrounds. Brown Ochre and Indian Yellow give a deep autumnal tint of great richness.

Carmine.—A very brilliant, deep-toned crimson, possessing great power in its full touches, and much clearness in its pale washes, although in this latter quality not equalling Madder Lake. It flows and washes extremely well, but is seldom used in landscape painting.

Crimson Lake.—Similar to the preceding, but deficient in the richness and brilliancy of Carmine.

Scarlet Lake.—More scarlet in its hue than the last, but not so transparent.

Purple Lake.—A transparent, deep-toned Lake, useful in shadows.

Madder Lake, or Rose Madder.—A very delicate carnation, much cleaner in its pale tints than either Crimson Lake or Carmine, but wanting in intensity.

Vermilion.—An opaque bright scarlet, high in its tone, but a want of transparency and its not flowing well preclude its being used so generally as would be desirable.

Scarlet Vermilion has properties the same as the above, with the exception of being a little more scarlet in its tint, and washing better.

Orange Vermilion.—Rather more transparent than the other two,

with a clear but not bright orange tint; it washes better than the other descriptions of Vermilion, and is for landscape purposes more useful.

Light Red.—A clear and transparent, but not a bright red, with somewhat of a tinge of orange; it is generally useful in landscape. With Cobalt it yields fine greys; with Black, and Brown Pink, fine warm near tones.

Venetian Red.—Its tints, though not bright, are clear, and it mixes and works kindly with Cobalt or with French Blue, affording fine pearly greys. Heightened by Madder Lake, it affords a fine glowing red, very serviceable in some descriptions of skies; and saddened by blacks, gives low-toned reds of good quality for buildings.

Indian Red.—Affords fine clear tints in the light washes, and useful shadows when mixed with Indian Ink. It is much used for greys when mixed with Indigo or with Cobalt.

Purple Madder.—An intensely deep, rich, and warm purple, affording the greatest depth of shadow, without coldness of tint. The clearness and beauty of its delicate tones render it valuable in every stage of a drawing. With Indigo and Raw Sienna it gives beautiful shadow tints.

Madder Brown.—Of intense depth and transparency, affording equally the richest description of shadows and the most delicate pale tints. With Cobalt, or with French Blue, a set of fine warm or cool greys are compounded, in proportion as the brown or the blue predominates.

Vandyke Brown.—A very rich transparent brown. It is clear in its pale tints, and deep and warm in its shadows. With Indigo it gives very clear, sober, neutral greens, for middle distance.

Sepia.—This pigment is of a pale brown tint. Its light washes are extremely clear; but its coloring property is so very strong, that, unless used with caution, it is apt to engender heaviness in the shadows. With Gamboge it affords, for landscape, a range of fine neutral greens, which are permanent. With Indigo, Sepia gives very cold dark greens, and with Prussian or Antwerp Blue, low olive greens.

Cologne Earth.—A cool brown, useful for the shadows of buildings; does not wash so well as Sepia, but is preferred for some purposes on that account.

Bistre.—A fine brown color that washes well, and has a clearness about it suited to shadows in architectural subjects.

Burnt Umber.—A quiet brown color affording clear and warm shadows.

Raw Umber.—A quiet yellowish brown, not perfectly transparent.

Indelible Brown Ink.—Although this cannot be classed as a pigment, yet, being very useful in the art, it may be proper to describe its qualities. This ink is a rich brown fluid, and, as its title imports, is indelibly fixed on the paper as soon as it is dry; thus allowing the artist to work or wash over it repeatedly, without its being disturbed. If diluted with water to its faintest tint, it still continues to possess its indelible qualities undiminished. It is generally used with a reed pen, and employed principally in architectural details and outlines.

Brown Pink.—This color is almost indispensable in landscape, affording generally the rich foliage tints in foregrounds. It may be modified by admixture with burnt Sienna, or Gamboge, a compound which, with the addition of a small quantity of Indigo, gives a warm green.

Olive Green (sometimes called Dewint's Green).—A fine deep olive green, of sober richness, much used in landscape.

Emerald Green.—A vivid light green, immediately attracting the eye to any part of the picture in which it may be used. It has the effect, where properly placed, of toning down at once, by the force of contrast, all the other greens of the picture.

Green Oxide of Chromium.—A deep toned-green, bright, but not vivid, as a landscape-green.

Ivory Black is the richest and most transparent of the Blacks, and has a slight tendency to brown in its pale washes.

Lamp Black is not quite so intense or so transparent as that made from ivory, but it is less brown in its pale tones; it has a very strong body that covers readily every underlay of color. Lamp Black mixed with French Blue or Cobalt affords good cloudy greys, which are sometimes useful for the shadows of heavy stormy clouds; but it should be used sparingly in a landscape, as it is a heavy color.

Blue Black is a black of a weaker body than the other two blacks, and consequently better suited for general mixed tints, in which it is

not so likely to look dense and sooty as the others may do; it also affords a serviceable cool shadow tint.

Neutral Tint.—A compound shadow color of a cool neutral character.

Payne's Grey.—Similar to the Neutral Tint, but having a little more lilac in its hue. By itself it gives a clear violet shadow. With a small portion of Burnt Sienna, it makes a clear neutral tone; and all the mixtures, whether the grey or the Burnt Sienna predominates, afford serviceable tints.

Chinese White.—A material of great importance to water-color art. It is prepared beautifully white, and possesses the desirable quality of dense body; so much so, that, as the painter works, his effects remain unaltered by the drying of the color. It works and washes with great freedom, has no pasty clogging qualities like the imperfect whites formerly in use, and its permanency is unquestionable. The following colors blend very satisfactorily with the White for opaque lights, viz.: Gamboge, Cadmium Yellow, Vermilion, Light Red, and Yellow Ochre.

It will be apparent that the whole of the foregoing colors are not required for any single work, but that a selection, according to the painter's intention, must be made from them. For general use, the following list will be found serviceable and convenient:

Gamboge.	Yellow Ochre.
Burnt Sienna.	Light Red.
Indian Red.	Purple or Crimson Lake.
Rose Madder.	Purple Madder.
Brown Madder.	Cobalt.
French Blue.	Indigo.
Vandyke Brown.	Sepia.
Olive Green.	Blue Black.

STRETCHING AND PREPARING THE DRAWING PAPER.

The paper should, as has been observed, be selected with great care. This selection being made, let it be placed on the drawing-board with the face, and not the reverse, uppermost. The face, or working surface, is that side on which, when the sheet is held between the eye and the light, the maker's name—the water-mark, as it is called—can be seen and read in due position from left to right. On

the reverse side all knots, flaws and projections are cut or scraped off by the manufacturer. This is usually done by him with a knife, which leaves an abrasion of the surface, into which, were that side used for the painting, the color would sink, and thus cause an unsightly blot or stain; and if this should occur in the sky, it would be fatal to the picture. Flaws sometimes occur on the face of the paper. To detect them, hold the sheet obliquely against the light, rather above the eye, and on looking upwards over the whole surface you can readily discover them. Having satisfied yourself that your paper is perfect, put a pencil-mark on the working face, to prevent error in placing it for straining.

This being done, next take a flat camel-hair brush or a soft sponge, and wet the sheet on both sides with clear water: roll up the sheet so wetted, and then either fold it in or cover it with a clean damp cloth, in which it may be left until you find that all the fibre of the paper has absorbed a sufficient degree of moisture. The precise time required for its being so left depends of course upon the thickness of the paper, and may be determined by bending or turning down an inch or two of one of the corners of the paper. If the bent corner preserve its elasticity, and so spring back, the paper is not sufficiently damped; but when, without of course being too much weakened by the water (in which case it will fall by its own weight), it does not spring back, the paper may be considered to have imbibed sufficient moisture.

If the paper has not been damped enough, it will not strain so as to present a flat, smooth surface, but will be apt to "cockle," and will be troublesome in working; whilst if wetted more than is required, it will contract too much in drying, and may probably rend at the edges or corners.

Great care must be taken not to rub the true or working surface of the paper (while it remains damp) with a sponge, a cloth, or any substance that may cause the slightest abrasion; for, whenever this is done, the paper is spoilt beyond remedy.

The beginner will do well to adopt the common framed mahogany drawing-board, as the most convenient and serviceable for general use. Paper, when damped in the manner above described, is merely to be placed upon the board and carefully inserted with it into the frame, in which it is held tight by cross bars at the back. Moreover

the drying should be gradual, and not forced by fire heat; for this would contract the paper too rapidly, and cause it to tear at the edges turned over the board.

If the paper, instead of being put into such a frame, be strained on the plain clamped drawing-board, the edges must be turned under, and then glued to the back. This mode of straining is less expeditious than the former; but it is sometimes desirable, particularly for drawings of large dimensions.

SCRAPING.

This process, when executed with a very sharp eraser, may be considered the best method for producing brilliant lights; such as a portion of pure white in the sky, the froth and spray of waves or of falling water, birds against dark clouds, and the like; but if it be necessary that the part thus scraped should be afterwards tinted, it must first be rubbed with a piece of clean india-rubber, and then smoothed by the application of any hard surface, such as the handle of a knife or a paper-cutter. The color will then lie on that part nearly or quite as well as on the unbroken surface of the paper.

Small partial lights in the drawing are to be obtained either by being scratched out of the broad washes with a sharp instrument, such as a penknife or an eraser, or by slightly wetting the necessary space with the brush charged with clean water: in the latter expedient, let the spot, when nearly dry, be smartly rubbed with a silk handkerchief drawn tightly over the finger, or with india-rubber. It must be observed that this is not successfully accomplished unless it be done in such a way as not to leave a woolly appearance on the surface, or on the edges of the lights thus obtained.

Chinese White is very useful for small and sharp lights in the foreground. These lights may be laid on in the desired forms with solid white, which, when perfectly dry, may be tinted or glazed over with the color required to produce the intended effect.

EFFACING, AS A MEANS OF MODIFYING TONE.

This operation is usually practised when half lights only are required; being a process whereby a too great strength and decision of tone are prevented. It may be effected with art gum, india-rubber,

a silk handkerchief, or a piece of chamois leather. The leather, when soiled by the color, may be repeatedly washed. The surface requiring to be acted upon is thus treated:—charging the brush with pure water, carefully wet that part of the under-tint or color where the light is required; then apply to the spot a piece of blotting-paper, by which the superfluous moisture will be absorbed; by the omission of this, you would fail in producing the desired effect. The moisture being thus removed, immediately apply the art gum, rubbing cautiously at first, until you ascertain whether the friction has been sufficient; if it has not, proceed more freely, until the intended effect has been produced. If the object be not gained in this manner, repeat the entire process, until it is properly effected.

Should the handkerchief be used, the blotting-paper may be dispensed with; for the surface having been moistened to the required extent, the light may be at once established by quickly and firmly rubbing, upon the moistened portion, the finger covered with the handkerchief or with the leather. The lights also may be subsequently tinted, if necessary; or, should they be found to be injurious to the effect, the former tone may be recovered by placing upon them a tint of the removed color.

The lights procured by these means are small points, which cannot, in the first instance, be left as all the broad lights of the composition should be.

Previous to any of these attempts at putting lights into a drawing, the paper must be perfectly dry; otherwise the operation may do serious injury to the surrounding parts.

ON THE HANDLING OF THE BRUSH.

Much of the freedom necessary to spirited and effective execution, particularly in the working of details, will depend on the care and attention bestowed on the manner of using the brush.

The hand may be lightly rested, but it must be in such a manner as to secure the perfectly free action of the wrist, and of the fingers by which the brush is held. In laying on the tints be careful to begin by laying them boldly and at once close to the outline, and not by repeated touches or by dragging the pencil timidly backward and forward.

It is especially to be observed, that, as a general rule, the brush should be tolerably full of color, in order that it may float freely, for upon this the cleanness of the work much depends.

The tints should be made moderately liquid before the brush be charged; and they should be laid upon the paper in a state as fluid as the requisite depth of tint and the preservation of the forms will allow, in order that the interstices of the paper may be well filled, and solidity of effect thus obtained.

In working details, the brush, after it is filled with color, should be drawn over a piece of paper provided for this purpose, to bring the hairs, if necessary, to a point, that the markings may be made with neatness and precision; and in laying flat washes, some attention is necessary to prevent a blotty appearance, which sometimes is caused by the over-charging of the brush with color. In such cases the brush, being only moderately filled, should not, after covering the space intended, have too much left in it; the effect of this will be, that it may be taken off the paper without leaving a floating spot or drop of color at the point of removal. If, however, there should by any mismanagement be left such a floating drop of surplus color, it may be removed by absorbing it into the somewhat dry hair of the pencil.

ON THE METHOD OF WORKING A LANDSCAPE.

ON LANDSCAPE OUTLINE.

The paper having been properly strained upon a drawing-board and being quite dry, the outline of the proposed drawing should be carefully made. This is a preliminary so important and indispensable that we will dwell somewhat minutely upon it.

An accurate outline saves an infinity of trouble by securing the hand against errors in the progress of the work; it ensures confidence in the use of the brush when charged: and the most valuable result of the confidence thus communicated is, that the tints are left clean and bright.

The outline should be sketched at first lightly, but carefully. The lines may afterwards be strengthened, where necessary, by a more decisive and vigorous touch, but if, in the first efforts to copy an object, the proportions be not correct, it is better to rub out the whole

than to tint upon a multiplicity of lines, which only indicate weakness and cause confusion.

Draw, then, with a fine but faithful and firm line, the remote distance, making the lines stronger in touch as they approach the foreground. The foreground itself should be laid in with something of spirit and decision; and you thus define, even at the outset of your work, the different degrees of distance intended. No shading, however, with the lead pencil must be attempted in any stage of drawing the outline.

If mountains constitute the utmost distance, the lines upon their edges should be extremely faint, though at the same time sufficiently definite; for a careless outline may involve you in difficulties which may ultimately cause you to abandon your work in disgust.

After the mountains have received their first tints of color, so as to define their forms, be careful to efface the pencil outline with indiarubber, or with art gum, the color being perfectly dry. The result of this will be a charming aërial effect, and the removal of any hardness on the edge of the wash.

In tracing distant objects, delineate their general forms only, without attempting detail; as, for example, in sketching a mountain, it will be sufficient to give the extreme outline.

In the outline of the foreground, however, greater minuteness must be observed; and the objects which usually constitute this portion of the picture — such as plants, figures, weeds, the bark of trees, and the like — should be carefully drawn from correct studies made from Nature.

In drawing the outlines of trees, their stems and branches, as far as they are visible, should be carefully made out. The foliage requires only a slight indication of form; it should be described rather by a series of short lines or dots than by anything approaching to careful manipulation. The extremities require a free touch: for, in fact, were every spray of foliage to be drawn in outline, the brush could not follow the pencil, without the sacrifice of all freedom and effective breadth of execution.

In that portion where buildings of any kind are introduced, the greatest accuracy is indispensable in drawing the form of the win-

dows, doors, chimneys, and other such details, as well as any other ornamental parts.

To efface the pencil lines, when any alteration may be necessary, the bit of art gum will be found to be a better material than india-rubber, as it is less likely than the latter would be to smear or injure the surface of the paper.

We have particularly recommended a neat and light outline for many reasons, and especially for this: that, if any force or depth of pencilling were employed in this preparatory process, the lead would sully and vitiate the color.

THE COLORING OF A LANDSCAPE.

Sky.—It has been generally recommended to the student to complete this portion of his work first; and in some cases, where strongly marked trees or buildings occur, and appear in direct opposition to the sky, it may be advisable to lay the intended amount of color in the sky before attempting to work up the remainder of the landscape: yet this is frequently not the best method of proceeding.

The tones of the sky, if carried over distant mountains, assist greatly in blending and harmonising them with it. It is even best, sometimes, to proceed so far as to get a certain amount of broad light and shade into the picture (according to the character of the composition), in order afterwards to arrange the clouds in a manner most suitable to the effect; or at least so as that they may not appear out of character with it.

The drawing-board should be inclined at a sufficient angle to allow the tint to flow freely over the surface, and to follow the brush; and previously to commencing the sky, a wash of clear water may be passed, with the flat brush, completely over the paper. The moisture having nearly evaporated, the sky is commenced as follows:

In order to produce an evening effect, a light tint of Lake is to be carried to the distance of about one-fourth from the top of the picture, and there a small portion of Indian Yellow is to be gradually added to the wash. This wash must not be abruptly terminated, but carried to the bottom of the paper. The result should be a tint graduating downwards from a pale pink into orange; becoming warmer towards the horizon, and gradually vanishing into the foreground.

When the surface is quite dry, after this operation, turn the drawing upside down, and repeat the wash of clean water, passing the flat brush very lightly across the surface, so that it may not disturb the tints.

Next, prepare a pale wash of pure Cobalt in a saucer; and, while the drawing is damp, but not too wet, and of course inverted, wash in the blue from near the line to which you first carried the lake; increasing the strength of the tint as you approach the upper part of the sky.

If this be properly done, the sky will, when dry, show a gradation of light blue and purple, in addition to the tint applied in the first instance.

Suppose that the object is a piece of moor scenery, having the distance closed with remote grey hills — a simple and useful subject to begin with. Having replaced the work in its first position, tint the distance with Cobalt and Madder Brown; these, upon the somewhat orange sky tint carried over the distance, will give a beautiful pearly-grey hue. More of the Madder Brown may be added, as you approach the middle distance, and the tint may then run into Vandyke Brown, or Brown Pink, carried over the foreground.

There may occur a pool of water reflecting the sky: — a passage which will afford a secondary light in the picture.

If these instructions have been carefully observed, the drawing ought now to present, in color and effect, a tolerable idea of what the finished work will be.

It will now be found that the strength of the ground tints has reduced the tone of the sky, which, when first washed in, appeared perhaps of a strength nearly sufficient; hence, to a certain extent, a repetition of the process is necessary. For this purpose the student must proceed as before. It will not, however, be required to strengthen or force the blue of the upper sky (a common error with beginners); but simply to strengthen the warmer tints below. Light Red may, in these subsequent washes, be substituted for Lake, and Yellow Ochre for Indian Yellow; for these colors, being less brilliant than the former, will assist in giving a quieter tone, should it be required.

It may be here remarked that it is a good practice to begin gen-

erally with the purer and richer colors; as a vivid tint may be easily cooled or subdued by others, while it is by no means so easy to give due brightness to a dull one.

A few somewhat horizontal clouds at the lower portion of the sky, near the hills, may now be touched in, and their shadows made out by pale Cobalt and Lake. The distant hills should be strengthened with a tint of French Blue and Lake; to which, as you approach the middle distance, add a mixture of Indigo and Brown Pink, which will form a greenish grey, and which may be washed into the Vandyke Brown first carried over the foreground.

Let the foreground be much paler in tone than the middle distance, and if any lines occur in the latter, keep them as nearly horizontal as possible; for this will communicate to that part of the composition the necessary appearance of retiring.

The sky being supposed complete, the distribution of light and shade in the picture is the next object of attention. In a scene of the kind supposed, the principal shade will reside in the middle distance, just as the sky may be said to be the principal light of the subject. But in order to counteract the heaviness inseparable from a large mass of shade, it is necessary that some object or objects, much darker in tone than the general shade of the middle distance, should be introduced; and in the effective placing of these darker objects lies the skill of the artist. A small hut, and some turf or peat stacks on the distant moor, form valuable materials for introducing these dark masses; whilst some light smoke curling from the cottage will assist in giving life and spirit to the whole.

Irregular patches of furze may be put in, in the middle distance, with the same color as that used for these dark parts; that is, with a tint either of Sepia and Cobalt, or a mixture of Vandyke Brown and Indigo, Olive Green or Brown Pink being added as the foreground is approached. Sepia and Indian Yellow, Brown Pink, or Vandyke Brown with Lake, will be found admirable for the rich color of the foreground; but if they be too violent, they may all be reduced by the use of a little Indigo or Cobalt. A few rushes and large weeds, with their reflection in the near water, will aid the effect; but they should not be too much elaborated, nor made so dark as to interfere with the principal shade.

Lights procured in the manner already described will give a finish to the picture. On this principle the light smoke may be made out; as also, leading into the middle distance, a straggling path, on which a small figure on horseback, or a man driving cattle, will afford an opportunity for a bit of bright color; and this, if well placed, will materially improve the drawing, by lowering the surrounding tones.

The great end to be aimed at is the preservation of the tints in the first purity, and the avoidance of the necessity of corrections. The student should therefore, in his early works, neither attempt sponging out, nor aim at too much finish. A beginner must not expect to effect at first all he may desire, nor allow himself to be disheartened because he may see a manifest difference between that which he has done and that which he hoped to do. He should determine to persevere; for he may rest assured, that with every succeeding attempt a greater degree of success will continually reward his efforts.

ON TREES AND FOREGROUNDS.

It may be said that no two persons ever painted a tree with precisely the same feeling. Some artists employ the color as wet as possible, and merely blot the forms of the trees in, mingling light and shadow together, and trusting to the lights intended to be taken out by the handkerchief when the work is dry. Others work in a manner altogether different. They employ their color in a state almost dry; and the hairs of the brush, spread abroad like a fan, are made use of rather to scumble the forms in than to define them properly.

A medium between these extremes is best to be pursued. The brush should be moderately filled with color; and, the stems and such other details having been carefully drawn in according to the foregoing instructions, the tree may be commenced from the upper part. Let us suppose, for illustration, that it is desired to represent an ash-tree. Prepare a quiet green with Gamboge and Indigo and a portion of Burnt Sienna, and with this fill a small saucer. Prepare in like manner a cool grey, composed of Cobalt and Light Red, having a brush for each tint so prepared.

The sky being supposed to be finished upwards, the student, having his brush moderately filled with the green tint, must endeavor with a free touch to give the effect of a light tracery of leaves, beginning at

the top of the tree; the extremities of the masses — or, in other words, the general outline — it will be remembered, must define the character of the tree. Care must be taken to avoid filling up the masses, but numerous small interstices should be left to show the lights piercing them, as they appear in Nature. The second brush, containing the grey tint, may now be exchanged quickly for the other. It is supposed that the student has carried the green tint as far down as the lower edge of the highest mass of the part of the foliage which is in light. The color being still wet, let him apply the grey tint in continuation of the first, until the form of the shadow or inner part of the tree at that place is marked. He must now resume the green tint; and so on alternately to the lower part of the tree, finishing with greys to express the dark shade under the lowest foliage.

This method of running or blending the two tints of the green and the grey together often affords accidental circumstances, which, when skilfully and tastefully turned to account, are highly suggestive of good effects.

It should be mentioned, that when the green is intended to represent leaves in sunlight, it should incline rather to a yellow hue, so as to give the effect of light and warmth. A small portion, therefore, of Indian Yellow may in this case be added with advantage.

The trunks should be put in with Grey qualified by a little Vandyke Brown. The stems and branches also may be drawn as seen at intervals in those shaded or retiring passages of the foliage where the Grey has been used, but never across the light or sunny parts.

With the Grey and Green mixed, you may now mark the shadow touches in between the masses, taking advantage of those parts where the former tints may have run accidentally and irregularly together, and being careful to make those near the edges of the tree somewhat fainter than those in the centre.

Olive Green or Brown Pink mixed with a little Indigo will now be useful to strengthen and modify the green portions; and the same, when mixed with Sepia or Vandyke Brown, may be employed to give the shadowings and markings on the stem and branches.

In a winter scene, when the trees are denuded of foliage, the network of the small branches at the tops of them may be prettily given with Cobalt and Vandyke Brown, used rather dry, and applied with

a brush having its hairs spread out either by the fingers or by drawing them through a fine-tooth comb before working. Grass is also represented readily by similar means, as well as small trees on the summit of a cliff and in similar positions.

Some of the most beautifully composed foregrounds are those in which clear water flows or ripples over small stones or pebbles. In this case the different stones should be defined simply by the shadows between them. A wash of Indigo and Brown Pink or Vandyke Brown may be carried over the portions of the stones supposed to be covered with water; and while this latter wash is damp, a few touches of strong dark color may be made to blend in some deeper and richer tones amongst the rocks and masses at the bottom.

Lastly, a few lines erased horizontally, when the work is dry, will give the effect of clear water above the stones by the expression of surface.

OF FIGURES IN LANDSCAPE.

Small figures or cattle are the great resource of the painter for the purpose of giving interest and life to his work. But in scenes of a highly romantic character (as a wild rocky river or a foaming cataract) figures are better altogether omitted.

In mere studies from Nature, figures are also out of place. To a pastoral scene, on the contrary, living objects are indispensable: a group of cows beneath the shade — the husbandman plodding homewards in the glowing eve — the shepherd's dog quickening the pace of the loiterers of his master's flock — may all be made to contribute to the delicious sentiment of such a scene.

A single figure is often introduced as a scale of measure, to enable the spectator to judge of the real dimensions of large objects. A flock of sheep frequently and greatly accord with the character of a rural or even of a rocky or mountainous scene.

An important use of bright color is derived from the circumstance, that the hue of any one particular tint may be materially increased by the immediate contrast of it with its complementary color; as green by red, orange by blue, and purple by yellow.

SUNSET.

The student who really looks to Nature for color, and studies care-

fully her combinations, will very rarely err materially in his work. Thus, at sunset, orange is the prevailing color, not merely in the sky, but also on all objects lighted by the sun's rays. The proper contrast to orange is blue; and accordingly we find that in Nature bluish or purple shadows are continually opposed to the warm orange lights. In a grey twilight, on the contrary, where the lights are sparkling but cold, the shadows partake of a warm or brownish hue. This principle must be borne in mind, as being one of the most important in painting.

In all effects, then, which depend upon sunlight, contrast is the great object of attainment. By contrast is meant, not only the power possessed by cool tints of increasing the hue of warm ones, but also the powerful opposition of dark tones against the lights of the picture. Let the student, for example, work a sky as follows:—at the top, with cool grey, graduated into pale orange, tending to red towards the horizon. The colors are to be employed according to the instructions given in the preceding pages. The colors may appear warm, but let some well-defined distant mountains be now put in with a sombre grey, composed of French Blue and Madder Brown, with a very little Indian Yellow or Gamboge. The distant part of the sky will now be luminous, and what before was merely warmth will now become light.

A middle distance of rocks, or wood, added with Vandyke Brown, Brown Pink, and Indigo, will cause the mountains to retire; and the sky and other objects, reflected in a rocky river in the foreground, may complete the work.

There are several methods of representing a glowing sunset. The sun may be painted with pure Chinese White, laid on sufficiently thick to hide the sky tint completely. This, when dry, is to be glazed with Cadmium Yellow, or Indian Yellow and Vermilion, according as yellow, orange, or red is required. This method gives a much greater degree of brilliancy than can be obtained by mixing the white with the colors. Another way is to scrape out the lights of the sun's disc; and the part being smoothed, it may be tinted in the manner above described. Clouds of a cool tint are often observed about the horizon, sometimes partially obscuring or crossing the sun; for these clouds Cobalt and Lake with a little White will be found effective, as they will increase the warmth of the luminary: they must

not, however, look chalky, which would result from using too much White in the color.

In studying such effects from Nature, where the color-box is not at hand, or when too much time would be lost in obtaining the requisite tints, the soft crayons with which colored crayon drawings are executed will be found of great service. The most powerful effect may be conveyed to paper by their aid in a few moments, and the sky just jotted down, as it were, afterwards studied and introduced at leisure with the ordinary water colors.

Some artists possess portfolios of skies, put in this manner on tinted paper: they may be caught thus from a window at a moment's notice, when all might have changed into sombre gloom long before color could even have been prepared on the palette. Moonlight or moonrise may be imitated in the same manner as sunset; but Gamboge or Indian Yellow will be best for tinting the moon, over the lower portion of which a faint tone of warmth may, when the moon is near the horizon, be given with Light Red. The sky in moonlight may be laid in with Indigo and a little Vandyke Brown and Lake: dark clouds, with Lamp Black and French Blue. With the two latter colors alone various beautiful stormy skies may be represented; the contrast of the blue causing the black to assume, if desired, a warm tone in shadows.

CHAPTER IV.

FLOWER PAINTING IN WATER COLORS.

ON DRAWING SINGLE FLOWERS.

In drawing single flowers, or two or three simply grouped without background, the importance of copying Nature as exactly as possible must be impressed on the mind of the learner. It is true that for pictorial purposes, Nature often may, and often should be altered and adapted, judicious selections only being made from her vast stores; but these liberties are for the eye, hand, and taste of experience alone; the beginner must be content with endeavoring to copy as closely as possible the object of study, leaving out nothing; for, as remarked by one of the greatest authorities, "in the practice of drawing or painting from Nature, there can be no doubt that, until correctness of eye and obedience of hand are attained, the closest possible, the most minute, imitation is the best"; and until the taste is in some degree formed, it is highly dangerous to attempt to generalize. "We should be able to put everything we see in Nature into a picture before we venture to leave anything out." Undeterred by the apparent difficulty, the attempt at least must be made to represent faithfully every incident of outline, and every variety of shade and color, however minute. The effect may often be spoiled at first by the greater difficulty of this plan of proceeding; but a few failures will, in all probability, teach more than many apparently successful efforts. The student must, at first, be content with learning only.

The reader must also be warned against being carried away by the very common and natural desire of sketching. Sketches are properly the notes — the memoranda, or perhaps the recreation, of the experienced artist; and facility, always so much prized and overrated by the amateur, is by no means an end at which to aim: if not a natural gift, it must at least be the natural result of well-directed efforts for general improvement. It is generally believed that considerable talent

is necessary to make any progress in painting, but however valuable may be the higher qualifications of imagination in the more elevated walks of art, and however they may facilitate the art of depicting simple and natural objects, yet, to do this not only tolerably, but even well, the only qualifications really necessary are a correct eye, a steady hand, and a moderate portion of common sense. One great and peculiar difficulty in representing flowers arises from their perishable nature; they change so rapidly that in some instances, even while drawing the outline, the object of study is completely altered. Besides this difficulty, the splendor of some flowers is such that many pigments, which are extremely unmanageable, are for the sake of their brightness pressed into service, and many troublesome means must be resorted to in order to realize that brilliancy which constitutes their chief beauty.

For these reasons, it is better to begin by selecting specimens as little complicated as possible; whilst easier to imitate, they also require less time, so that there is a reasonable chance of completing the drawing while the model retains its freshness.

MATERIALS.

For materials and method of preparing them for use, see foregoing chapter on Landscape Painting in water colors. The colors necessary for flower painting are:

Chrome Yellow, No. 1	Crimson Lake,
Indigo,	Indian Yellow,
Cobalt,	Carmine,
Vandyke Brown,	Pink Madder,
Sepia,	Indian Red,
Chinese White,	Gamboge.

The following also, though not often required, are indispensable for the painting of some particular flowers; it is, therefore, well to be provided with them:

Scarlet,
Lemon Yellow,
Chrome Yellow, No. 3,
French Blue,
Smalt.

A little dissolved gum-arabic, or water-color megilp, and a small sponge, will also be found useful.

THE PROCESS OF PAINTING.

The light best adapted for painting is that obtained from one window only, the student being seated so that the light may come over the left shoulder. If there are more windows than one in the room, it is desirable that the light of all but one be obscured as much as possible, the object of study being so placed that no light can come behind it. By closing the lower part of the window, from which light is obtained in the usual manner of painters, much stronger effects of light and shade are procured; but as the natural accompaniments of flowers are light and air, such effects cannot certainly be so much in harmony with the ideas they suggest as those resulting from a more diffused light. Indeed, but for the difficulty of so studying them, nothing could be more desirable and beautiful than the effects obtained by painting them in the open air.

A flower having been selected as a study, it must be placed as naturally as possible in a vase of water. Any small-necked vessel that will support the subject will answer the purpose.

The first object now is good outline, which here means simply a correct one. The greatest pains must be taken to draw carefully and correctly every part of the flower, beginning generally in the centre, particularly if it is a full view which is to be represented. Every petal must have its own complete outline, not only indicated, but carefully defined.

As regards improvement and accuracy, the drawing should be as nearly as possible of the size of the natural object. A small brush, filled with a pale tint resembling the local color of the flower, is the best instrument with which to draw the outline; but until a little practice has given ease and readiness in use of the brush, an HB black-lead pencil will be found more convenient, as the markings from this are easily effaced. Care, however, must be taken that the lines drawn with the pencil are so pale as to be barely visible; for nothing can be more disagreeable to the eye, or more unnatural, than a dark line, which no subsequent operation of the brush can efface.

The flower should now be washed smoothly over with a tint match-

ing as closely as possible the lighter tones of its own local color. This wash should be begun at the upper left-hand side, proceeding quickly to the right and downwards. Beginners generally experience a little difficulty in this process at first; but if attention be paid to keeping the brush equally full of color until it is completed, the difficulty will be easily surmounted.

Beginners frequently exhaust the color in the brush before filling it afresh; the consequence of which is, that the new supply of color flows back into the former, leaving, when dry, a distinct mark, which is not only undesirable, but impossible to be obliterated without sponging the whole entirely out with clean water and recommencing.

Fresh color must, therefore, be taken so frequently that no difference can be perceived between the tint of that which flows from the brush, and that which is already laid on; the large pool left when the wash is completed (so constantly a difficulty until dexterity in handling is obtained) can be best disposed of by drawing the brush gradually to a fine point against the extreme outline.

When the color thus laid on is perfectly dry, the shadows must be carefully painted in, and washed, in the manner already described, pains being taken to match their color with that of Nature. The shadows generally appear, in some parts, to be insensibly lost and blended with the pure color of the flower. This effect may be produced by passing over their edges, while still wet, a clean brush, rather dryer than that with which they have been painted. The local color may then be deepened where necessary, and the darker shadows may be worked upon until they are of the proper depth, and finished by small touches wherever great nicety is required. Some artists endeavor to finish their works entirely with soft washes, whilst others execute them completely with large or small touches;* but perhaps a middle course between these extremes produces an effect more like Nature than either.

A strict and constant study of Nature is the surest means of improvement; for it is certain that there is always much more difficulty in really seeing Nature as she is than imitating what we see. To the practised and observant eye, every shade which once appeared but one monotonous tone of grey will contain a multitude of tints, each more

* This process is called stippling.

delicately beautiful than another — a thousand gradations of light and shade will be discerned which were before invisible, and the discovery of new beauties in every part of the object of study will reward perseverance, and rouse to new efforts of imitation.

The leaves must be executed in the same manner as the flower. When of a glossy surface, and therefore affording brilliant lights as well as shadows, they must be washed over with a very pale shade of cobalt and Indian red mixed, the veins only being left (if they appear of a very bright green), and those lights which appear absolutely white. When this is dry, the local color, composed of chrome yellow, No. 1, and indigo, must be laid on carefully, the lights only being left. The shadows must then be painted in with the same color or a little gamboge, and indigo, with a very small addition of Indian red; then the veins, if dark, with the same color; and the whole, finished with small touches, where necessary, as directed for the flowers. Some leaves are of a silvery greyish tone; for these the local color must be composed of cobalt and chrome yellow, No. 1, with an almost equal quantity of Indian red. The shadows also must have a less proportion of yellow than those of brighter leaves.

When white is used it should be the permanent "Chinese white," the only preparation which to undoubted durability adds facility in working.

In order to assist these remarks, a few examples will now be given of the best and easiest method of painting some of the flowers most commonly met with, and most suitable for representation.

THE PRIMROSE.

The common primrose, being very simple both in form and color, is a good subject for a first study, if it can be procured.

The outline being drawn carefully, beginning in the centre of the flower, and all the parts intended for coloring wetted with clean water, it should be washed over with a thin tint of lemon yellow such as will match the depth of the larger portion of the flower, leaving only those parts, if any, which appear to be white or nearly so. The color must be softened into these with a clean brush, as already explained. The color for the shadows must be composed of cobalt, pink madder, and a very little gamboge; the two former being mixed together first, and

then the yellow added, always matching the tints used with those of the flower itself. When quite dry the yellow must be deepened where necessary, the green in the centre painted in with a little gamboge and indigo, and the deep yellow marks which surround it with gamboge alone. The local color for the leaves may be composed of chrome yellow, No. 1, and indigo, with a very slight admixture of Indian Red: for the darker shadows, a little gamboge will be required instead of chrome yellow.

THE YELLOW CROCUS.

This flower is of a tone so deep that chrome yellow, No. 3, must be used for the local color; and after the shadows are finished with a mixture of pink madder and a very little cobalt, it must also be glazed with gamboge.

A great number of flowers are variegated with orange and yellow. For these, the chrome yellow, No. 1, should be first washed over the whole, and the orange parts then painted in with chrome, No. 3, glazing the whole, when finished, with gamboge.

For scarlet and yellow flowers, the chrome must be washed over the yellow parts only, and after the scarlet is painted the whole must be glazed with gamboge.

THE GERANIUM.

The only color by which anything approaching to the brilliancy of the scarlet geranium can be obtained is pure scarlet.

Exposure to the atmosphere, and the contact of metals, are the evils to be avoided in using scarlet. As soon, therefore, as the flower is finished, the bright shadows having been painted with carmine, and the dull ones with Indian red, it must be glazed thickly with a solution of gum-arabic, which will, by excluding the air, obviate the former difficulty. The latter must be provided against by never mixing it with a metallic color; indeed it is safer always to use it alone.

Many varieties of the geranium are of a beautiful rose color, of various degrees of depth, which can be best produced by washing, first with a thin tint of scarlet (sometimes very pale indeed), according to the depth or redness of the color, and then covering this with pink madder. The shadows of these flowers should be painted with pink madder, a very little cobalt, and still less of Indian yellow, mixed

together. The upper large and pencilled petals are redder and darker than the rest. The scarlet must, therefore, be laid on more thickly, washing them over afterwards with pink madder; but great care must be taken to keep the white near the centre of the flower quite pure, both



THE CROCUS.

colors being softened into it with a clean brush. The dark patch of color in the large petals must then be laid on with carmine carefully softened; and the beautiful pencilling must be imitated as exactly as possible, with a mixture of sepia and crimson lake. A very little gum-

arabic may also sometimes be used to increase the transparency of very dark shades of color.

For the purely pink varieties of geranium, the scarlet must of course be entirely omitted, pink madder only being used for the local color.



THE GERANIUM.

For those flowers partaking of a violet color, a little cobalt must be mixed with the madder, and the dark pencilling imitated with indigo and crimson lake.

For the white varieties the reader is referred to the general directions for painting white flowers, using for the dark petals either of the mixed colors recommended above which most resembles Nature.

THE ROSE.

The rose is an extremely difficult flower to paint, because, whilst itself particularly perishable, the representation of it is equally tedious. The time necessary for completing the intricate outline often changes so completely the state of the flower, that it can scarcely be recognized. The student is therefore recommended, until a little advanced, to attempt this flower only in the autumn, when it is much more lasting than during the heat of the summer weather.

In pink roses, the local color is best imitated with pink madder, a pale tint of which must be washed over the flower, leaving only the perfectly white lights. When quite dry, the darker petals must be again covered with a deeper hue, and again with a deeper still the dark ones near the centre. Sometimes the color of these, in parts, is extremely red; if so, a little scarlet must be washed over them first.

The shadows must then be laid on; but so great is the transparency of the petals, that very little grey will be perceived in them. A very small proportion of cobalt and Indian yellow must, therefore, be mixed with the madder with which they are painted, and for the darker ones carmine only may be used.

For dark roses, crimson lake will be found the best color, instead of pink madder and carmine.

Yellow roses should be painted in the same manner, with either lemon yellow or chrome, No. 1, for the local color, the darker shades of yellow being finished with gamboge. The shadows can be painted with the same grey as recommended for other yellow flowers—viz., that composed of cobalt, pink madder, and a little gamboge.

WHITE FLOWERS.

In painting white flowers, it is unfortunately totally impossible to produce the brilliant whiteness of Nature. The paper on which the drawing is to be executed, and the purest white pigments, are only of the same degree of whiteness as the flower in its half shade; if, therefore, either of these is used for the prevailing tone, which it most resembles, there will be no means left to represent, or even to attempt to imitate, the high lights. The whole flower, therefore, to be in keeping, must be painted a degree lower than Nature, and washed over

with a pale grey, just as the local color is laid on in other flowers, leaving only the high and most brilliant lights. For this grey the same colors may be used as before — viz., pink madder, cobalt, and a very little Indian yellow, mixing the two former together first, and then adding the yellow cautiously. The shadows may then be laid on,



THE WHITE AZALEA.

but with a much warmer grey — that is, with a less proportion of blue in it.

In painting a white lily, chrome yellow, No. 3, may be used for the anthers; but in the white azalea or other white flowers, where they appear pale, a little Chinese white, mixed with chrome, No. 1, will be more appropriate.

Very dark flowers, such as some poppies and hollyhocks, must be begun with a very pale wash of cold grey. Indigo, with a little crimson lake and sepia, will be a convenient mixture for this, as the same colors, although in very different proportions, must be used for the local color. In laying this on, care must be taken to leave the lights clear, and if any of these appear quite white, they must also be left in the first wash of grey, which will itself represent the lesser lights.

COMPOSITION AND ARRANGEMENT.

If after having, by practice and experience, attained some degree of perfection in these efforts at imitation, a desire be felt to form groups and to make pictures, the reader must be reminded that arrangement and composition belong solely to the province of art.

There are many forms of compositions used, but of these the pyramidal is the best, if not the only one adapted to the representation of flowers; but, like all other artificial arrangements, it must be so carefully concealed as not even to be suggested to the eye. If symmetry demands precision and balance of form, attention must not be called to the fact, but the outline must be so varied and broken that it may pass unnoticed. Sharp or conspicuous lines of any length must always be avoided, either by interweaving them with others in the manner of Van Huysum (whose forms are so graceful that even an engraving from his works is beautiful) or by softening or concealing them entirely at intervals. Even the outline of one particular object, if clearly defined and sharp throughout, will be extremely disagreeable to the eye, and unnatural in its effect. All lines must be occasionally lost, and yet not in such a manner as to sacrifice the drawing; for an undecided woolliness of outline is another error equally to be avoided. The outline must be lost, and again reproduced, wherever a few sharp and sparkling touches will give force and interest.

Great attention must be paid to perspective, which should be as correct in the drawing of a single rose-leaf as in that of a Gothic abbey. The group should appear round, and receding from the eye at the extremities. Neglect of this is a common error; care, therefore, must be taken (both in form and coloring) not to bring these parts too forward, as if every object were on exactly the same plane. A diligent

observation of natural flowers, grouped together, will best give an understanding of the effect to be produced.

The greater the variety of form, the more pleasing will be the effect. For pictorial excellence, it is therefore easier to group several kinds of flowers than to form a composition of one species only, which presents many obstacles to be overcome in the unavoidable monotony of form and limited range of color.

The student should use judgment in selecting his flowers, as an illogical combination of wild and cultivated flowers, for instance, or of those whose periods of blossoming are not contemporaneous form not only an inharmonious but a ludicrous picture.

The background, too, must harmonize with its subject. For who would place an orchid on a rush-matting or a stalk of corn-flowers on a velvet cushion? This part of composition of whatever constituted must be strictly subordinate and assist the general idea, as also the coloring and forms whilst remaining itself almost unnoticed.

In a few words, truth, elegance, and variety are the primary qualities which the student must seek to attain in the outlines or form of a composition of flowers.

CHAPTER V.

CRAYON OR PASTEL PAINTING — PORTRAIT PAINTING IN CRAYONS.

COLORS.

The colors employed in pastel are generally those which are used in oil painting; there are, however, exceptions. Those named in the following list are best adapted for crayons:

White Chalk.	Indigo.
Spanish White.	Prussian Blue.
Oxide of Zinc.	Smalt.
Naples Yellow.	Cobalt.
Mineral Yellow.	Terre Verte.
Chromes.	Cobalt Green.
Cadmium Yellow.	Brunswick Green.
Gallstone.	All the Greens from Copper.
Soft Red Chalk.	Green Oxide of Chromium.
Chinese Vermilion.	Umber.
Venetian Red.	Lamp Black.
Chrome Red.	Ivory Black.
Carmine.	Blue Black.
Lakes (various).	Black Chalks.

PAPERS.

There are papers manufactured expressly for crayon painting; and these have the advantage of greatly assisting the labors of the artist, and in facilitating his progress, especially by readily receiving the crayon.

A preference for color in paper is a mere matter of taste. All colors are in use — blue, grey, buff, straw, olive, drab, and stone color; but in the employment of strongly-colored papers there is no real advantage. A dark ground in flesh painting is more difficult to deal with than a light one. Blue paper has been extensively used, but it has this disadvantage. At the commencement of a drawing, the colors appear warm and harmonious by opposition; but when the whole is covered,

a grey tone prevails throughout the work, which deprives it of life-like warmth and freshness. In using a paper of a warm grey or yellowish tint, similar to that of canvases prepared for oil painting, the artist would be more sure of the results he might desire to accomplish.

A good paper for portraiture, and agreeable to work upon, is the pumice paper.

As the crayon tints are rubbed in with the finger, it will be necessary, before commencing a picture upon a coarse pumiced ground, to rub down with paper the rougher parts of the surface. If this be neglected, the skin will quickly be abraded from the finger.

Before proceeding to draw upon the paper, it must be mounted on a deal drawing-board, and secured by thumb-tacks.

THE METHOD OF WORKING IN COLORED CRAYONS.

The practice of painting in crayons consists of drawing the outline, laying in the tints in their graduated shades, and blending them into harmony with the forefinger of the right hand. Some artists use the finger covered with a portion of a white kid glove; but the leather has this disadvantage — in working very delicate colors, they are likely to become vitiated by other colors being carried into them by the glove.

A rapid and ready method of executing small portraits consists in working the crayon lightly (or chalk, for it is equally applicable to that material) by means of a stump made of leather or grey paper. When the sketch of the features is made, the tints are laid in with the stump, and when the breadths are completed, the whole is modelled, retouched, and hatched with crayons of somewhat harder texture, which are employed to determine outline, to define form, and communicate sharpness here and there where it may be necessary, and ultimately to correct the drawing.

But the student must be cautioned that the breadth of the stump is the rule — the point of the crayon is the exception. If there be more than a certain proportion of sharp lines in a portrait, it becomes hard, and unlike nature.

The execution of a life-sized head or portrait is thus carried out: the outline may be made with a firm crayon, either brown or red. Grey is also used; hence it will be seen that the color of the crayon is entirely discretionary. The drawing must be made lightly, in order

that the crayon does not enter the texture of the paper so as to render the markings difficult to be superseded subsequently by the necessary color.

Black-lead pencil, for instance, would be unsuitable for this purpose, as the metallic surface that it leaves will not receive crayon.

When the outline is complete, the breadths are made out by means of a brown crayon and a stump, working especially for the degrees of shade.

When the likeness is as satisfactory as it can be made in a first sketch, the complexion may then be proceeded with, beginning with the lights. The whites, yellows, reds, and greys must be worked in by superposition, and blended to an imitation of the reality of nature.

From the highest lights, the student must proceed by gradations to the deepest shades, and these, in order to secure roundness and substance, must be put in equal in strength to nature; after which, the middle tones must be very carefully blended, so as to unite the lights and shades by imperceptible gradations. The markings must be definitely made out, and the reflexes also, if there be any.

As the fresher tints occur principally in the lights, it would be well to keep the color rather high, and of a warm tone, in order to reserve the brightest and most effective tints till the last. When all the tints have been laid in, in a manner somewhat resembling mosaic — when the head is in a satisfactory state as to form, color, and expression — then, with the forefinger, or the little finger, the whole is passed over, and the colors worked and blended into harmony. In this operation the finger acts as a stump, and nothing else will be found so effective.

The result of this treatment will be a flattening and softening of the whole work, the breadths as well as the outline, and also a marked reduction in the freshness and spirit of the color; and hence the necessity of a forcible sketch to work upon.

When this operation is concluded, the crayons will be again used to bring up the color and tone to those of the life — to modify and correct those which may require retouching. Those passages which are heavy must be relieved, and those which may be too cold or too warm must be reduced to harmony.

Working with the finger will be found at once the most available

method of managing the crayons, and the learner will soon acknowledge that the desirable result is unattainable by any other means.

The errors into which a learner may fall arise from the constant and indiscriminate use of the finger. The results of this are as already stated — the enfeebling of the drawing, the loss of outline, and the reduction of the tints to flatness and opacity.

COLOR, AND THE COMPOSITION OF TINTS.

The shade of flesh tints is warm or cold according to the warmth or coldness of the breadths of the light. If the lights be of a healthy hue, the shades may be warm, inclining to brown, mixed of various colors, broken with light red, carmine, yellow, and blue or grey.

It is advisable generally to follow the Italian feeling — of leaving the dark passages warm. The deepest shades even should be relieved by a certain transparency, obtainable by half-tints. Without such relief, they will always be expressionless and heavy.

In feminine portraits or studies, the work must be brought up to the utmost brilliancy of color by the brightest and freshest hues, composed of white, Naples yellow, vermilion, and madder, mellowed with yellows, or slightly empurpled with lake or carmine, according to the prevalent tint of the subject.

In the masculine subject the colors will be stronger, and the half-tints more positive.

Great care must be observed lest the high and delicate passages be soiled or stained. They must only be approached by, and blended with, other shades at their extremities; and these shades are, in most cases, half-tints.

Those half-tints, or warm or cold greys, which are employed as intermediates to meet and reconcile tones of remoter degrees, must be qualified with the colors with which they are associated; otherwise they will not harmonize. It will be obvious that, if the intermediate tint be too cold, it must be treated with the reds or yellows; if too warm, reduced by grey or blue. The lights and shades should be carefully graduated, and harmony prevail throughout the work.

DRAPERIES, BACKGROUNDS, ETC.

The draperies, dress, and accessories must be treated with greater

freedom and decision than can be used in the features; and this larger manner will, in contrast with the delicate drawing of the features, serve to give value to the latter.

Backgrounds are not to be rubbed in mechanically, with the persuasion that any dark will relieve any light, or that any middle tint that may be cut by shade will suffice. It will be understood, as a general rule, that the background immediately round the head should be lower in tone than the half-tints of the face, and lighter than the shades, to give air and space — to disengage the head.

It frequently occurs that in passing repeatedly over certain parts of the work, the paper becomes glazed or greasy, under the frequent application of the pastel, and thus refuses to receive the color. In this case, in order to restore a practicable surface, it will be necessary to rub it gently with pumice pounce, very fine glass-paper, or, what is still better, with cuttle-fish.

VELLUM.

For crayon paintings, vellum is an admirable material. It is firm, and the surface does not become coarse by being rubbed. It receives color very agreeably, and retains it satisfactorily.

In the selection of the vellum, some care must be exercised, in order to procure a skin entirely free from blemish, and as uniform in substance throughout as possible. If any thin parts occur towards the centre, it would be well to avoid placing on such a part any very prominent feature of the picture; it were better, if possible, to model the face so as to avoid this part of the skin.

In order to prepare a surface for the crayon, the skin must be fixed by a few nails to a perfectly smooth board or table. The reason why the board or table should be perfectly smooth is that any inequality of surface must tell upon the surface of the skin. Any indent will cause the vellum to be stretched, or left imperfectly rubbed up in that part; any, even minute, elevation rising above the general plane of the board may cause it to be cut through.

There is a rough and a smooth side to the vellum, and it is scarcely necessary to say that it is the even smooth side that must be worked into texture, for which purpose the fine glass paper, known as No. 1, is used. A piece of this paper, held in the fingers, and rubbed with

firmness on the skin, will break up the vellum into that rough surface favorable for reception of the crayon. The method of effecting this is to rub circularly (not back and forward) and thus to pass over the entire piece of vellum, until the whole presents a surface similar to, but much more uniform than, the wrong side of a piece of leather.

When the face has been sufficiently roughened, it is transferred to a stretching frame, and strained over a backing of very fine canvas, or canvas over which smooth paper has been pasted; and the vellum must be laid down so carefully, that no inequality exist in the cloth or paper beneath it. It is then ready for the easel.

COLORING ON VELLUM.

In treating of the manipulation of pastel, we confine ourselves properly to the method of working in this material.

For feminine and youthful portraiture, vellum is preferable to paper; it supports the delicacy and brilliancy of the complexion of women and children, and the surface better represents the fine textures natural to such studies.

The drawing of the head may be made out with red chalk, or a hard grey crayon. The outline and first drawing will be superseded by color; the lines, therefore, are slight, so as to be easily effaceable. In drawing, however, a head in which the color and workings are stronger than in feminine and youthful portraiture, charcoal or a dark hard crayon may be used.

With the following colors and gradations, portraits and heads of any degree of force or delicacy may be executed:

White.
 Naples Yellow.
 Yellow Ochre.
 Three or four of the lighter gradations.
 Light Red. (All its gradations.)
 Vermilion. (All gradations.)
 Madder. (All.)
 Lake. (All.)
 Indian Red. (All.)
 Grey.

All gradations, from the lightest to the darkest, warm and cold, and not too Blue.

Raw Umber. (All.)
 Burnt Umber. (All.)

Burnt Sienna. (All.)
Cologne Earth.
One or two warm Browns;
And Black.

In executing the portrait of a lady, after the first outline, draw and carefully make out, with color true to nature, the eyes, nose and mouth.

In dealing with the breadths of the face, the gradations of shade had better be rubbed in first with some flat tinted grey, but short of the force and depth of nature. This must be done with the finger, and if the tones of nature be observed and followed, it will produce some resemblance to the sitter, as to the drawing, though perhaps, not as to the complexion.

It is sometimes usual to commence the breadths of the face by rubbing in white where the brightest lights occur, as a suitable dead color for the high tints which must follow.

Although the colors are reduced to tints and gradations in crayon painting, it must not be supposed that they can be laid in such a sequence on the vellum, and be so left; they must be mixed and blended with the finger, for without manipulation of this kind, even the most cunning art in the mixture of tints avails little.

The highest lights may be wrought with tints of vermilion and Naples yellow, or the lightest degrees of yellow ochre, blended with the finger into a softness in which neither the red nor the yellow shall prevail.

According to the strength of the color which may tint the cheeks, the lighter degrees of vermilion or madder may be employed, and these must be blended and softened into the general complexion, working always with the finger.

In order that the endless diversity of hue generally observable in a face may be successfully imitated, it will be necessary to follow nature by working yellows into reds, and reds into yellows, in such a manner as to leave neither color in undue preponderance.

Having worked the lighter breadths into harmony, and nearly up to the force and brilliancy of nature, it will be necessary to harmonize the shadows.

It was a principle of Vandyke that there was no color in the shade of flesh. This is the true principle of the shade of delicate tints; and, in order to realize this neutral, of which grey is always the base, the

grey which was rubbed into the shaded passages must be qualified slightly with yellow, red, or raw umber; or, perhaps a tint of the three, composed with the finger on the vellum.

The more strongly tinted masculine complexion may be imitated from the same selection of colors and tints, employing the stronger tones of yellow ochre, light red, vermillion, and lake. The shades and markings may be of umber, slightly qualified with lake or Indian red.

When the coloring has been brought up as nearly as possible to nature, the features may be finished by defining the markings and drawing of the eyes, slightly forcing the shade which relieves the nose and rounds the shaded side of the head. The drawing of the mouth must be retouched, and the shades relieving the chin laid in to the strength of nature.

The colors for light hair are formed of white, yellow, and the lighter tints of the umbers, burnt sienna, and black; and for dark hair, the same colors in their strongest tones, as also Cologne earth, Vandyke and other browns.

LANDSCAPE PAINTING IN CRAYONS.

The crayons used are somewhat harder than the soft powdery kind required in portraiture; they are manufactured expressly for landscape; and in their consistency resemble the substance of firm chalk. Indeed, as to substance and texture, the quality of chalk is a desideratum in these crayons. Between a material of such consistence and the paper, there is a certain affinity, technically called a "bite," to which the artist is indebted for much of the beauty of his work.

The following is a list of the most useful crayons; and it will be observed that among them there are very few bright and positive colors:

WHITE.

White Italian Chalk.

STRAW COLOR AND LIGHT YELLOW.

Pale and middle, deepening to sober full yellows of the yellow and brown ochre hues.

BLUE.

Bright azure tints of varied strength, pale and dark.

GREY.

Pale and deep, of blue, neutral, and warm tones.

REDS.

Vermilion tints, pale and middle.

Indian red, various degrees.

BLACKS.

Conté crayons, Nos. 1, 2, and 3.

The white Italian chalk is used not only for the lightest touches, but to blend and qualify all the other crayons into which it may be worked.

The black Conté chalks are also of the utmost importance. Nos. 1 and 2, the harder degrees, are used for outlining; and the softest degree, No. 3, may be blended with many colors to reduce their tones. The methods of using this material will be explained as we proceed.

THE PAPER.

Any of the soft machine-made drawing-papers may be used; but it is indispensable that the tone of the paper will be such as will support and bear out the colors of the crayons. The paper, in fact, must supply an available middle tint; for, in this manner of crayon painting, the color of the paper appears through almost every passage of the finished work. If, therefore, the tone of the paper be either too glaring or too dull, it will be altogether unsuited for an effective and harmonious picture.

The paper upon which most successful pictures have been executed, is a soft paper of a low-toned olive tint, which has been found, by long experience, to be better adapted than any other for landscape drawing, as affording an agreeable neutral, upon which warm or cold tones, lights or shadows, may be placed with the best effect.

The paper is attached to a deal drawing-board, by means of pins placed at intervals round the edges.

The paper must be larger than the intended drawing; for from the necessarily spirited manner of working, the exact dimensions of the drawing are sure to be exceeded; but, when finished, this margin is cut off.

THE SKETCH AND EXECUTION.

The composition must be very lightly defined with the Conté crayon, No. 1; the whole of the objects being made out just sufficiently to guide the artist in the flat tints of the sky and distances.

The difference between the crayons used in portrait painting, and those employed in landscape, has been already spoken of; and the difference in the manipulation must now be described.

The landscape crayons being harder than the others, the value of this difference will at once be understood, as soon as the crayon is applied to the paper.

The breadths of the composition are not laid by working with the point of the crayon; but a portion of the crayon, sufficient for the purpose required, is broken off, and applied flat, or lengthwise, to the paper; being held between the thumb and two fingers. In this manner it is worked lightly over those parts of the drawing which it is desired to tint; and the spirit and lightness of the tint is derived from the hardness of the crayon, which is "bitten" by the surface of the paper, and leaves on it a moderate quantity of color.

This tint is rubbed vigorously with the two forefingers, so as to work the color well into the texture of the paper. For the same purpose, also, the breadth of the thumb is employed, and the fleshy part of the palm of the hand. As the operation leaves but little color, these tintings are repeated, until the necessary strength of tone is obtained, varying and blending the colors by working them into each other, as the subject may require.

By this means, the flat or fundamental tints of the sky are laid; upon these are superposed the clouds, and passages of aerial effect, by means of pieces of crayon used lengthwise in the manner above described, working them obliquely, horizontally, or vertically. In this way may be obtained such effects as are procurable by flat tints in water or oil-color.

The fundamental breadth of the sky may be brought below the line of the horizon; and it will thus serve as a base whereon to mark the distant mountains, or other extreme passages of the composition; drawing the remote forms with pieces of crayon, held flat or lengthwise. These tints are blended with the fingers, and the tones repeated where necessary.

The distant ridges of the mountains being made out, the middle distance and the nearer objects are approached by the neutral tints; still drawing with broken pieces of crayon, worked obliquely or otherwise, according to the feeling to be expressed. The broken pieces of

crayon, are used as drawing tools, just as brushes and pencils are employed in oil and water-color painting.

The sky and distances exclude the more decided markings which occur as we approach the foreground; there the black Conté, Nos. 1 and 2, are used; and in the near parts of the picture these are very important.

With these Contés all the striking features of the near composition, such as trees, rocks, and buildings, are drawn, and the material is used in the manner already described; that is, in its length and breadth — broken into fragments, suitable in size to the object to be drawn. Where any fine lines are necessary, these are not made by the crayon cut to a point, but by the sharp edge of the fracture of the crayon.

Each object, after having been drawn in with the Conté, is then appropriately tinted or colored, by working over the black markings with the necessary colors. The manner in which this is performed is like the operation of glazing in oil painting; because under the light network tracery of the colored crayon the Conté drawing is still visible. By blending, and again drawing with Conté, and again glazing, as often as may be necessary, we approach the finish of the picture, which is completed by sharp and spirited touches of light, put in with the sharpest parts of the fractured end of the colored crayon.

It is advisable that beginners should, for their initiatory essays, select easy subjects, in order to acquire neatness of execution, which is indispensable in crayon landscape drawing. The color should be used but sparingly, and the black chalk should appear as a prominent material in the drawing. And if over the black markings the colored crayon be lightly drawn, color enough will be left to tint the object, without concealing or breaking up the Conté drawing beneath; the surface-color forming a light network tracery over the black.

The result of the application of the crayon lengthwise to the paper is a broad clear touch, similar to that of the hog-hair brush in oil-painting; and this touch is made to vary in breadth, according to the manner in which the piece of crayon is held; as it may be worked flatly in its entire length on the paper, or held transversely at any angle, to yield a touch of any breadth, varying from the finest line to its entire length.

Perhaps the great charm and novelty of this method of drawing is

the successful imitation of the transparency of oil-painting. By attempting to load, or rub in color in finishing a work, this beautiful effect is destroyed. The texture of the crayon does not admit of massing color — the beauty of the work depends upon the paper being yet perceptible through the ultimate finish.

It is only in the last sharp finishing touches or points of light that color in quantity and force is required. All the colors laid in the earlier and progressive stages of the work should be laid with a view to the acquisition of transparency.

Any markings too sharp and square may be worked down by the finger, and, when necessary, tints may be worked into those previously laid, leaving wholly or partially all that is necessary for the drawing or color. These markings and retouchings are repeated until the desired effect be obtained; but it must never be forgotten that by an extravagant loading or rubbing in of color the transparency of the work is lost; the result being a coarse, smeary, and opaque effect.

TO FIX CRAYON DRAWINGS.

To fix and solidify crayon drawings has long been a desideratum. As it is now practised, we shall give the best known recipes.

The means which have been employed with greater or less success are transudation, or moistening at the back, immersion, aspersion, and steaming. But which of those means soever may be used, the result will always be a reduction and flattening of the tones; the brilliancy of the lights will be reduced, and the shades will be deprived of much of their depth. It will therefore be necessary to retouch those passages which may be found to have been changed.

The only material that in anywise approaches the qualities required in a fixing liquid is isinglass, which is employed in the following manner:

FIXING BY TRANSUDATION.

Infuse an ounce and a half of the best isinglass, during twenty-four hours, in five ounces of distilled vinegar. Add to this one quart of hot water, and keep the liquor at a gentle heat, but not warmer than can be borne by the finger. Stir it often with a wooden spatula until the isinglass be entirely dissolved, then filter it through paper.

When the liquor is filtered, it is put into a large bottle, pouring in alternately a glass of this compound and a glass of spirits of wine. The bottle may then be corked, and the liquid shaken for about seven or ten minutes, to mix the whole sufficiently. This terminates the composition of a fixing liquid, which, if skilfully employed, will be found to answer the desired end extremely well.

When this mixture is to be used, place the picture horizontally, with the crayoned side downwards, supported at the sides or corners so that the color does not touch the table. The liquid is then applied to the back, with a brush of about an inch in diameter, until the liquid has penetrated through to the crayoned surface, and all the colors become moistened and shining, as if varnish had been passed over them. The first application will penetrate quickly, in consequence of the dryness of the paper, and the absorbent nature of the colors. This is repeated, but with less liquid, and every care must be observed to spread the mixture with great evenness over the back of the picture, in order that there be no stain. When this process is completed, the work may be turned with its face upwards, and allowed to dry.

It sometimes occurs that there are colors which are not properly set by being once subjected to the process. In such case, it becomes necessary to apply the mixture again in the same manner as before.

When the process is concluded, there may still remain minute particles of crayon which have not been set by the liquid. Some of these particles might become detached from the background, and cause mischief to the flesh colors. They must, therefore, be removed by passing the finger over the background, in the same manner in which the picture was painted.

This method of fixing pastel drawings is simple, easy, and tolerably certain. The change which it causes in the picture is inconsiderable, and the firmness is such that the pictures may be cleaned without injury to the colors.

Pastel drawings mounted upon canvas may be treated in the same way, if the canvas has been prepared with starch.

Should the drawing have become flattened in tone, or should it appear that a greater degree of decision or force is anywhere required after the work has been fixed, a portion of crayon may be dissolved in a small quantity of this liquid, and in this way the crayon may be

employed, like body color, to touch upon and strengthen these parts which may require additional force.

FIXING BY IMMERSION.

Into two glasses of filtered water put as much alum as the water will dissolve. When the water has become saturated, pour it off carefully, in order that no particles of undissolved alum may remain in it. Add about half an ounce of good isinglass, and let it remain thirty-six hours. Warm this compound in a water-bath, in order that the isinglass be thoroughly melted; strain it through fine muslin and pour it into a glass bottle, into which there has already been put three pints of pale brandy, or spirits of wine.

In order to effect the immersion, a large, flat dish may be used; but a large zinc pan would be better. Into this is poured the fixing liquid, which has been previously heated in the water-bath, every care being taken that no deposit is admitted. The picture is held horizontally, the crayoned surface downwards; it is dipped into the mixture, and quickly withdrawn in the same horizontal position. It is then placed in the shade, and when dry (it can be determined whether the pastel is fixed by rubbing it with the finger) the crayon ought not to come off; and if the process has been properly conducted, no great change will have taken place.

After having been fixed in this way, pictures executed in pastel may be varnished. If this be desirable, the picture should first receive a coat or two of a strong solution of isinglass, to which is added one-third of spirits of wine, or of good pale brandy. When this is dry, it may be varnished.

Crayon pictures thus fixed, but not yet varnished, can be retouched with the pastel, dry, or moistened with the fixing liquid, as already described.

FIXING BY ASPERSION.

Dissolve in a water-bath two drams of isinglass, in a pint of water, and to this add two pints of spirits of wine. This compound is applied to the back of the picture by means of a brush, which, being dipped in it, the hair is bent back, and by being allowed to recover itself by its own elasticity, distributes the liquid very equally over the paper.

FIXING BY STEAM.

For this process, a tin vessel, with a tight-fitting lid, is necessary. From the side of this vessel, near to the lid, projects a pipe five or six inches long, having a small rose head, perforated with numerous small holes, after the manner of the common garden watering-pot. Into this vessel is put two ounces of spirits of wine, and two drams of powdered sugar-candy. While this compound is boiling, the steam which issues from the rose head of the pipe must be directed to the back of the picture, until the paper and the colors are perfectly saturated.

Sometimes the steam is directed on to the pastel ; but it must not be allowed to condense and form drops. The picture must be held at such distance from the vessel, that too much of the steam be not deposited at once.

If the steam has sufficiently penetrated the colors, they become perfectly fixed when dry.



Henri IV Ware.

CHAPTER VI.

CHINA PAINTING.

MATERIALS.

The materials required are:

White, undecorated china.	Silk for tinting or flushing.
Tar-oil.	Cotton batting for tinting or flushing.
Dresden thick oil.	Paste for raised gold.
Lavender oil.	Gilding wheel.
Spirits of turpentine.	Glass brush or brushes.
Frey's medium.	Alcohol.
Brushes.	Roman gold (Hasburg's).
Glass muller.	Liquid bright gold.
Glass slab, 6 x 6.	Glass slab for gold only.
Palette (porcelain or large tile).	Palette knife for colors.
India ink.	Palette knife for gold only.

COLORS FOR FLOWERS AND FRUIT.

Dresden yellow green.	Dresden pompadour red.
Dresden dark green.	Dresden purple black.
Dresden brown green.	Fry's (powder) black.
Dresden moss green.	Fry's (powder) peach blossom pink
Dresden olive green.	Lacroix's deep blue green.
Dresden rosa.	Lacroix's brown, No. 4.
Dresden ruby purple.	Lacroix's apple green.
Dresden banding blue.	Flux.
Dresden lemon yellow.	Relief white
Dresden yellow brown.	Hard white, for conventional work.

Lacroix colors are used for all conventional work.

Buy the best brushes, for in no branch of painting is it so essential to have good brushes as in china painting, where the surface offers so little assistance to the brush. Camel-hair brushes are the best, but good sable brushes are used extensively. A large round brush for painting grounds, two fine tracers, one for gold and one for color, a square shader, No. 6, and a sable pointer, No. 4, will suffice.

Care of one's brushes is a very important duty. After using, they should be thoroughly rinsed in turpentine, then carefully washed in

warm water and Ivory soap. Rinse in clear water and point with the lips. Keep them away from dust, points up, in a tall vase or glass, so that nothing can come into contact with the hairs.

GOLD.

As the gold is really pure gold, ground down in flux and oil, it must be carefully cherished. *Never* use any of the implements used for gold, for any other purpose. Scrape the slab with a palette knife if necessary to remove any considerable amount of gold that you wish to replace in your gold receptacle, but never wash the slab. Indeed it is better to have a separate box for gold and implements and put your gold palette away uncleaned. Keep a tiny vial of alcohol in which to wash brush and palette knife. After a little use in this manner, the vial will be found to contain quite a deposit of gold at the bottom. The alcohol can then be poured off and the gold rescued for future use. The liquid bright gold is very much cheaper than the roman gold, but is very hideous, being seen only on extremely cheap pieces of decorated china. But used in conjunction with roman gold, it is quite a money saver. Say, for instance, you have the handle of a cream-jug to gild. Paint for the first fire, with liquid gold. Then have fired. Now put on a second coat of roman gold and fire again and burnish. You will find that you have a beautiful rich gold at half the expense you would have incurred, had you used two coats of roman gold. For it is essential to have two separate coats and fires, properly to cover the china.

I spoke of burnishing the roman gold after firing. When it returns from the kiln, it looks like a dingy yellow paint; but by vigorous rubbing with the glass brush the gold comes out beautiful and gleaming.

Gold cannot be used over color unless an especially prepared "unfluxed" gold be used. Even then it has not the brilliancy of gold placed directly upon the ware. I find it much better to scrape away the color (of course before firing), and then apply the gold to the bare surface.

RELIEF GOLD.

Gold in relief makes an exceptionally rich ornamentation. It is done in this wise: Take as much "paste for raised gold" as you think you require from the bottle, grind thoroughly, with muller, and add

enough Dresden thick oil to form a stiff paste. Then thin with lavender oil enough to enable you to apply it with a *fine* brush in ridges or dots, as you desire. It may be applied over color, before firing, if the color is well dried in a warm oven. Great care must be used to keep the paste lines smooth, and not patchy. After a fire the paste is gilded with the usual fluxed roman gold. Never use raised gold on tableware, as it cuts off with a knife and can even be chipped off by striking against other pieces of china.

For enameled dots of white or color, which are beautiful when placed over a gold background, use the German relief-white or "auf-setz-weiss." It can be used as it is, in the white, or tinted with turquoise, green, pink, or any delicate color. It is first mixed with tar-oil to a consistency which will admit of its being applied in relief and color added as desired. Too much oil will cause the enamel to "spit" or bubble and destroy its beauty. Enamels should have but one fire.

"Jewels" can be bought together with a vitreous cement for applying them to the surface of the ware. They are used only on art-pieces and run such great risks in the kiln that it is advisable for the amateur to shun them. They are often set into raised paste and the paste afterward gilded to form a setting for the jewel.

THE WHEEL.

From time immemorial the potter's wheel has been in use. By its means, beautiful even bands and lines of color or gold may be applied to plates, saucers, cups; in short, to anything circular in shape.

The article to be painted is set upon the wheel. Then the hand holding the brush, charged with gold or color, is placed upon a rest at the side. The point of the brush is lightly rested upon the point of the circle nearest the rest and the wheel slowly turned with the left hand. And presto! a beautiful, smooth, perfect circle has been described. If the student intends doing much work, I should certainly include a wheel in the list of materials.

FLUSHING.

In the list of materials the reader doubtless noticed an item of silk for flushing. Therein is contained quite a chapter on china-painting. The silk required is a soft India or Sarcenet. It should be light col-

ored or white and of a good quality. No silk with a twilled surface will answer. Old handkerchiefs make the very best pads to be had. If the silk is new, wash thoroughly in castile soap and water. After using with paint, it can be cleansed with turpentine and re-washed in warm soapy water. Never discard until the holes begin to appear.

To make a pad, take a piece of fine cotton batting about the size of a peach and smoothly cover with a six-inch square of silk. Gather in the edges and corners and tie firmly with a thread. See that there are no folds or wrinkles on the bottom or working surface of the pad.

Having applied the design to your china, take a large clean tile or palette and thoroughly grind your color with an equal quantity of tinting oil, made from one part Dresden thick oil to two parts of lavender oil.

If color is too thick to flow smoothly from the brush, add more lavender oil.

Now take a large brush and quickly and rather evenly paint on the color as desired. Then, taking up the pad by the tied-up end as a handle, dab lightly and evenly over the entire painted surface. Pad over whole surface and then if not as smooth and even as desired, go round and round until all is alike. If white spots appear, the cotton has become damp. Then you must open your pad, fold in wet side of cotton and readjust silk.

Change the surface of the silk, too, if it becomes too charged with color. When desiring to blend two or more colors, either use separate pads or different spots of a large one, on different colors. About handles and feet, where a pad will not reach use a dry camel's-hair blender. Now you will probably find that your tint has passed the bounds prescribed for it. In which case wipe the edges clean with a cloth slightly *dampened* with turpentine.

In cleaning up in this way, it is very essential that it be done neatly, as it will all come out in the fire exactly as you leave it, finger-marks and all. If small corners must be cleaned that cannot be reached with a rag on finger or brush, let the piece dry in a warm oven, then scratch out difficult places with a pen-knife.

If the piece presents a dry powdery appearance after the fire, rub down some flux a little thick oil and lavender and paint and pad over with this exactly as you did in the flushing, and refire.

To be successful in flushing, have the china moderately warm. Sometimes the weather conditions are such that it is impossible for an expert to do successful flushing, as before electric storms. In this event put the china aside and turn to painting.

In applying a ground that is not to be flushed, rub color down in less oil and paint on with a broad brush. If a deep tint is desired, paint lightly for the first fire and deepen for the second. For if too much color is applied for the first fire, it is apt to chip off and leave little white spots of china showing through, which are utterly irremediable.

Royal Worcester and all "matt" backgrounds are soft and waxy in appearance. The matt colors can be had in delicate blues, pinks, yellows and ivories. They are in powder form, put up in glass bottles. They form the grounding of most of the art pieces turned out by the celebrated factories of Worcester and Doulton.

One method of applying them is to mix turpentine, or, better, lavender oil and English grounding oil in equal parts and paint and pad the china with this, exactly as you would for flushing.

Then let the piece stand for ten minutes. Meanwhile rub down your powdery color dry, with the glass muller. Then, taking a piece of cotton batting, use exactly as you would a powder puff, and lightly dust the powdered color onto the "tacky" surface of the china. Then set aside or in a warm oven to dry. Coral pink, of the matt colors, can be fired but once. Oftener, and it loses its color.

FIRING.

And speaking of firing, I wish to advise the beginner not to attempt any himself if he can possibly find anyone within a hundred miles who can do it for him. It requires a great deal of experience, and many failures. For some pieces of work must receive a great deal of heat, while others demand less, and it is only the practiced operator who can handle his kiln satisfactorily.

Better pack the china carefully in wooden boxes and send to the nearest kiln. But if it is *impossible* for the beginner to send to a not-too-distant one, there are many excellent ones on the market, which with labor and patience any person of intelligence can master.

TO TRANSFER DESIGN TO CHINA.

Make your design in pencil on a piece of smooth paper. Then trace it with a hard pencil onto a piece of tracing paper or ordinary tissue. Now, reversing the tissue paper, go over the lines on the wrong side with a soft pencil.

Next paint your china over with turpentine spirits and let dry. Now place your tissue, with soft-pencilled side down, upon the china. Hold firmly in place, while with your hard pencil you run over the lines with a firm touch. You will now find the design transferred to the china. For conventional designs India ink is used with a brush to sketch in the design. Or it may be used to run over the lines transferred as above. This will give a line which is not so easily erased as is pencil.

But for unconventional work it cramps and prevents easy outlines, tending to make edges sharp or hard. The India ink of course disappears in the fire, as do the pencil markings.

DECORATIONS.

The most popular decorations to-day are masses of flowers or fruit with softly tinted backgrounds running to strong tints at bases and edges, and with faint shadowy leaves showing softly against the grounds.

Then there is the conventional. And at present there is a great revival of this style of decoration, enamels being used to portray conventionalized fruits and flowers.

There is so much scope for the individuality of the painter, in this field, that it offers many charms for the beginner. But it is a very painstaking sort of work, as it must be very exact. Beauty of design must be supplemented by harmony of color, and accuracy of touch.



Spray of Apples Treated Naturally and Conventionally.

LESSON I

A light room must be selected to paint in, and the table arranged so that the light may come from the left. There should be no carpets, curtains or upholstered furniture in the room, as all these dust gatherers are inimical to paint. A big painting apron with long sleeves is a delight, as it not only keeps one's clothes clean, but suppresses the lint arising from woolen garments.

So much for environment. Now to proceed to the lesson.

Before attempting anything to fire, let the student confine his efforts to a single tile. Take your square shader No. 6 and, say, some olive green. Grind the color well with your palette knife, upon the palette, and add about half as much of the painting oil which you have mixed in a little salt or butter dish. This has been mixed of about one part of Dresden thick oil to two (or possibly a little more) of lavender oil. See that your color flows smoothly. Now charge the brush with

color and practice different strokes. Try to make a complete leaf with one stroke of the brush. Then when dry, add the shadows at a stroke. Now, flattening the brush, and with the addition of a little black to the paint, use the fine sharp side of it to make the veins and a hint of an outline. Keep the work clean and clear. Fussing over it will destroy the effect of clearness and freshness.

Practice differently shaped leaves and flowers, as the daisy, wheat-ear, violet leaf, rose leaf, etc.

Keep at this work with one color, before attempting anything else, until you have learned to use your brush. The touch must be firm and decided, and the only way to acquire it is by practice.

I would say another word here about our mutual enemy, dust, or lint: While painting is in progress no one should be allowed to stir about, especially when a delicate piece of flushing is in progress. If, as sometimes will happen, particles of lint settle upon the paint, they should be removed with the point of a needle. For, if allowed to dry in and be fired, the particle itself disappears, but you will find that it has gathered unto itself quite an accumulation of color, which will show up very badly in the fire.

LESSON II.

Select a tile and draw or transfer the design of the accompanying cut to it. Then grind some Lacroix dark blue with the prescribed quantity of Dresden and lavender oils. Paint in background below horizon line. Use a broad brush and paint in smoothly from left to right. Paint in the hay-ricks and clouds. Then, with less oil, to insure a deeper color, paint in the hair, dress, bundle and shoe of the figure. Proceed to lay in the flat tints of the scroll and title. With a fine brush paint in all outlines. Remove with a knife the white lines in foreground which represent the stubble.

Now the tile must be fired. When it returns from the kiln add delicately with a small square shader the shadows on the face and those on the apron, bundle, shoe and dress.

Now, using the edge of the same brush, put in lines of hair, dress, kerchief, bundle, grass, etc. Also paint in the wheat, and the defining lines of the distant landscape. Proceed in the same manner with title and scroll, finally adding the border.



LESSON III ON ROSES.

This will mean quite a jump from a simple tile in monochrome, to a plate of roses. But if one has any knowledge of painting in its other branches, it will not seem so difficult.

First prepare your palette — and I hope you have bought for one dollar, one of the covered ones. For by so doing, you can keep your paint moist and free from dust from one day to the next, and thus need not throw it away. Even if it should dry a little, it can be ground up with a little turpentine.

Do not make the mistake of taking out a greater amount of paint than you need, as that is extravagance. Yet to take out too little wastes the time required to replenish the palette. Find a happy medium and adhere to it. Take a little ruby purple (as it is expensive), some banding blue, powder black, purple black, lemon yellow, apple green, olive green, yellow green, moss green, yellow brown and peach-blossom pink. Thoroughly grind each color with the medium before mentioned. The powders require more Dresden thick oil. Do not be afraid of grinding up the colors. They require thoroughness. Now taking your plate (a bread-and-butter size is best, without a flange), sketch or transfer a design that shall form a wreath of roses and leaves. Place the roses in about five clusters of two or three roses each, and connect them with sprays of leaves and trailing stems. Now with your flat shader paint in one or two roses of each cluster with the peach-blossom pink. The secret of delicacy in china painting lies in the faintness of the first coat of paint. So make this first very delicate. Use peach blossom and a *little* ruby purple for the deep shades in the centre and for a few defining touches. This is enough for the pink roses for the first fire. Now taking peach-blossom pink and a little ruby purple, faintly, but not so faintly as for the pink ones, paint in the ground of the red rose. This should be crowded close to the pink one for contrast. Make centre of ruby purple and a bit of black. (Ruby-purple should never be used clear, as it is too vivid alone.) Also a touch here and there to define the rose.

Now turn to the leaves. They are by far the most difficult. Those above the roses should be kept lighter in tone than those below, and they all should form a complete setting for the roses, allowing no break in the background they make, immediately about the flowers. This will round out the blossoms. Now put in a few olive green leaves. Simply map them in. Then with moss green and ruby purple map in a few below the roses. Now taking a bit of banding blue and ruby purple and a bit of black, to make a purply shadow, dot in a few shadowy sprays about the edges of the design. Some brown leaves also help in the foliage effect. A few prominent good-sized leaves may be faintly tinted with yellow green for the first fire, some tipped with lemon yellow. A little banding-blue with apple green makes a light aerial green for the upper part of the design. A few

vine-like stems with projecting thorns may be painted with yellow brown and ruby purple.

Proceed in like manner with each group, until all the design has had a faint color put upon it. Now let dry and if you desire any gold on the plate, apply a line of liquid gold to the edge. Stippled gold is away out of fashion. Send to fire. When the plate returns, have palette arranged as before. Now shade the pink roses with peach-blossom pink and ruby purple. The red ones with ruby purple and purple black (mixed with the brush). Add shadows to the olive green leaves of olive and purple and black mixed. Also vein with same, using sharp edge of brush or a fine pointed liner. Purple and black with a suggestion of olive will do for shading and defining the moss green and ruby purple leaves. The pale brown leaves may be shaded with olive and a bit of black. The lighter leaves may be veined, shaded and slightly outlined with moss green and olive, or moss green and a bit of black.

The black is very essential but must be used very delicately. Like ruby — *never* alone. Now about the deeper portions of the work, and right over the shadows *that have been fired*, paint in soft cloudings of banding blue and purple, mixed. A few dark splashes of green and banding blue among the shadows, below the design, will tend to throw it out. A little brown and ruby may be clouded in above, as well as some lemon yellow. Now taking a pad, blend these shadowings together so as to nearly cover the plate. But be careful not to venture near the design with your pad, as you would blot out all your work. Let dry, go over the bright gold with a coat of roman gold and send plate to be fired.

When it returns burnish the gold with glass brush and the work is complete.

SOME COLOR HINTS.

Ruby purple and banding blue are mixed for violets. A few of pure banding blue are interspersed. Shadowy ones are made of banding blue mixed with a little black, also of brown and a touch of ruby purple. Faint shadow violets are also painted of banding blue, purple and black. Anemones are painted with Rosa or peach-blossom, shaded with a little ruby purple. The centres are of lemon yellow deepened in the shadows with yellow brown, and brown green.

Jonquils are painted with Lacroix jonquil yellow, yellow brown for depth of color and yellow brown with a bit of black for shadows.

Pompadour red makes beautiful dashes of red color in cloudings for grounds.

For painting in dark grounds use anise oil and lavender oil to mix color, and use anise on brush. Lacroix deep red brown makes a rich red for solid grounds.

CHAPTER VII.

PEN-AND-INK DRAWING.

Of late years several influences have tended to raise the importance of Pen-and-Ink drawing as an independent art. Chief among these is the gradual substitution of photo-chemical processes for the hand work of the wood engraver; the cheapness which has resulted, has occasioned an enormous increase in the number of illustrated books and periodicals.

There are two distinct methods of obtaining effect with the pen — one by few lines laid slowly, and the other by many lines drawn with rapidity. If the intention is to see what effect may be obtained with comparatively few lines slowly and deliberately laid, we may refer from amongst the Old Masters to the woodcuts after Albert Dürer and Holbein, and the line engraving of Marc Antonio. The engraved plates by Dürer furnish us excellent examples of work with more and finer lines than his woodcuts. Some of the etchings of Rembrandt are on the other hand perfect samples of what may be fairly reproduced in pen-and-ink. In them we find the effect to depend upon innumerable lines in all directions.



Study Raphael.

For economy of line with extraordinary power of suggesting a great deal with very little work, perhaps Mr. Caldecott's designs rank as high as any. The illustrations by Adolf Menzel to the life of Frederick the Great are perfect mines of study.

It is excellent practice occasionally to make pen-and-ink studies very rapidly from nature without any previous pencilling whatever. I have found this equally useful in landscape or figurework. Studies made thus are almost sure to err in matters of proportion, but are rarely deficient in emphasis. Before commencing a design, for a book illustration, for instance, it is not a bad plan to make some preliminary studies in this hurried manner; and then after the careful drawing has been completed with all the finish that an unlimited bestowal of time can effect, to compare the two. It will usually be found that there is something in the first, unsatisfactory as it seemed perhaps when just done, that may with advantage be incorporated into the second.

Touching the question of direction of lines as indicating that of surface, observe these few points:

“If lines are to be distinctly shown, it is better that, so far as they *can* indicate anything by their direction, they should explain rather than oppose the general character of the object. And Albert Dürer, whose work was chiefly engraving, sets himself always thus to make his lines as *valuable* as possible, telling much by them, both of shade and direction of surface. But inasmuch as the perfect way of drawing is by shade and without lines, you will find that the great painters do not much trust to direction of line, but will often scratch in the shade of a rounded surface with nearly straight lines, that is to say, with the easiest and quickest lines possible to themselves. When the hand is free, the easiest line for it to draw is one inclining from the left upwards to the right, or *vice versâ* from the right downwards to the left; and when done very quickly, the line is hooked a little at the end by the effort at return to the next. Hence, you will always find the pencil, chalk, or pen-sketch of a *very* great master full of this kind of lines; and even if he draws carefully, you will find him using simple straight lines from left to right, when an inferior master would have used curved ones. Even the careful drawings of Leonardo da Vinci are shaded most commonly with straight lines; and you may always assume it as a point increasing the probability of a drawing being by a great master if you find rounded surfaces, such as those of cheeks or lips, shaded with straight lines.”

Our illustration, by Mr. E. J. Gregory, is an excellent example of

simplicity in execution, the lines hardly ever being crossed, and yet a great deal of variety in tone and texture being attained.

As in the case of writing with the pen, we are often able to recognise at a glance the individual hand, so, and much more so, should it be with a drawing. This strong point is sure to be attained unconsciously

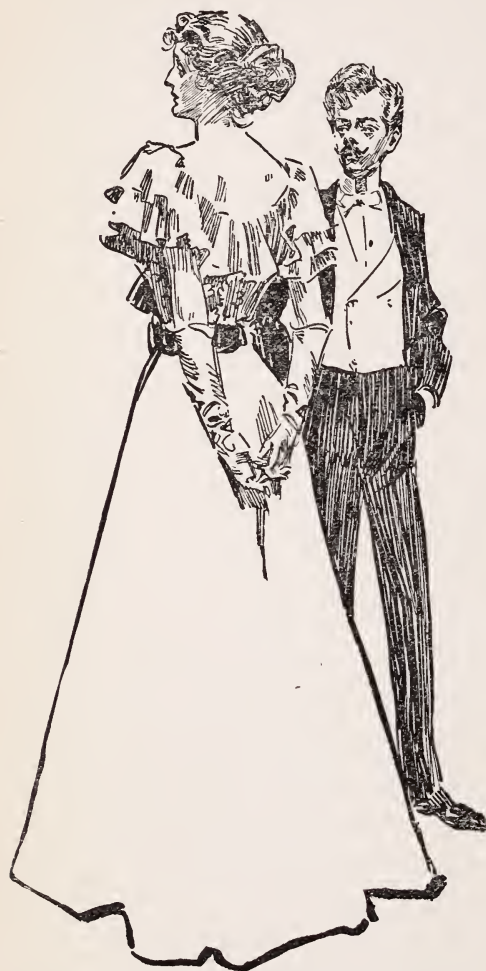


The Sanctum Invaded, by E. J. Gregory.

if an artist's work is simple and sincere, and not the mannered imitation of another's style.

When making a pen-and-ink drawing, or any study in black and white (other than outline), there are two distinct motives which should be kept apart in the mind of the student, though in his work they are

bound to overlap each other more or less. The first is the representation of the light and shade, and the second is the rendering of the local tones or colors. It is important to dwell on these two different aims, because I have often noticed an absolute confusion in the use of the



Chas. Dana Gibson in Pictorial Comedy.

terms amongst students and amateurs, such as is shown by the remark, "I thought the black and white of a picture meant the same thing as its light and shade." A couple of examples will make my meaning more clear than any amount of explanation. In Mr. Charles Keene's drawings in *Punch*, particularly in his early ones, he made no difference in the treatment of a black silk hat and a straw hat of pale yellow, or between a black coat and a smock frock; every object having the half which is turned towards the light left white, or nearly so, while the other half has a medium tint of lines to represent shade. If this treatment be contrasted with Mr. Du Maurier's later drawings, the difference that I mean will be seen at once. In the latter we find black coats represented as nearly uniformly dark, while a

white shirt will be almost blank paper.

As in painting the quality most essential is color, so in pen-and-ink drawing or etching, it is the suggestion of color which is the most

important. The main reasons for this seem to be, firstly, that we see all objects in nature as variously colored masses, our perception of the local color remaining through all the changes of light and shade; secondly, that the light and shade is more subject throughout to fixed rules than the color, and so the translating of the different colors of a picture into black and white shows us infinite varieties of subtle and broken tones with occasionally startling and pleasing surprises.

There are however some cases in which the light and shade and the black and white of a subject are pretty nearly identical in tone; as, for instance, in the portrayal of sculpture, or in the representation of an interior lighted from a single small window, and where the principal objects happen to be draperies and furniture of a lightish color. In the latter case we are always grateful for such a point of dark value as is given by a head of black hair, or of light value as a white cap; because they tend to give suggestions of delicate color to the rest of the picture.

Many of the etchings of Whistler depend for their effect upon large spaces of paper being left white, and the judgment with which this is done shows mastery quite as much as the lines actually drawn. An excellent example is shown in the picture of his mother. To express the greatest number of facts with the smallest possible number of lines, and to put down those lines with perfect freedom of handling, is to be master of the art.

I cannot conclude these general remarks better than by again quoting from our great art teacher, who after telling the student not to be impatient with his pen and ink, "for all great painters, however delicate their perception of color, are fond of the peculiar effect of light which may be got in a pen-and-ink sketch and in a woodcut, by the gleaming of the white paper between the black lines," adds the following emphatic piece of advice: "Do not, therefore, think that your drawing must be weak because you have a finely-pointed pen in your hand. Till you can draw with that, you can draw with nothing; when you can draw with that you can draw with a log of wood charred at the end."

PRACTICAL INSTRUCTIONS.

As most of the pen-and-ink drawings are now done with a view to reproduction in the printing-press it should materially assist the student to understand how this is brought about. The following is a simplified description of the ordinary 'line block' method:—A photographic negative is first taken of the drawing, in which the aim is to secure perfectly clear glass where the lines are, and an opaque black for the white paper. A polished plate of copper or zinc is coated with a thin film of gelatine to which a small percentage of bichromate of potassium has been added. This metal plate is then put into a photographic printing-frame under the negative, just as if it were prepared paper, and exposed to the light. After sufficient exposure it is removed from the printing-frame and placed in warm water, when the unexposed parts of the film dissolve away, leaving only lines of gelatine hardened and insoluble where the light has penetrated. When dry it is submitted to the action of a corrosive liquid (perchloride of iron) which attacks the metal where free from gelatine, and so eventually lowers the surface of all but the lines: these remain standing to be printed from, along with the raised type of the letter-press.

The importance of perfectly black lines and clean white paper can hardly be exaggerated from the technical point of view.

A pen drawing may be either sketched in pencil to be removed afterwards with india-rubber, or made in pencil on another piece of paper and traced. If the first plan is adopted, a soft pencil must be used and the drawing should be lightly touched, as hard rubbing with the india-rubber may affect the ink lines. There is a third method, that of making a very decided pencil drawing on one piece of paper, and then choosing a thin semi-transparent paper on which to make the pen drawing. This is laid over the pencil study so that it may be seen through and may serve as a guide for the finished drawing. Even tracing paper itself is said to be used in this way, but it must be the comparatively thick sort which is a bluish white rather than yellowish in color.

In making corrections a very sharp pen-knife should be used: if white is used, such as Chinese White or Winsor & Newton's Albaine. care must be taken to keep the touches sufficiently opaque. It is

curious how any flaws such as broken lines or patched-up places seem to get exaggerated reproduction:—hence it is very often worth while to stick a clean piece of paper over a damaged spot and re-draw the unsatisfactory passage.

The special requirements in an ink for line reproduction are an intense black which shall photograph well, and sufficient fluidity to work easily and not clog the pen. Some varieties are praised because of their drying a dead black without shine on the surface, but I have never found that a slight shine on the surface has affected the photograph. There are many inks specially prepared for the purpose. Winsor & Newton's "Process Black" is much used, and "Higgins' Drawing Ink" is very excellent. Whatever make is employed it is wise to shake the bottle before beginning to work, as there is generally



Study of Foliage — Sir F. Leighton.

some tendency to separate into a watery fluid and a thick deposit.

Mr. Ruskin, in his 'Elements of Drawing,' sets the pupil down for a considerable time to the simple task of laying a flat tint by means of pen and ink. He advises the student to draw a square and try to fill it in with crossed lines so completely and evenly, that it shall look like a square patch of grey silk or cloth, cut out and laid on the white paper. He is to cover it quickly, first with straightish lines in any direction he likes, not troubling himself to draw them very closely or neatly. These lines are to be crossed with other sets of lines in all directions, care being particularly taken that each set of lines be in turn allowed to dry thoroughly before being crossed by another set.

In this exercise swiftness of execution is recommended to avoid the dot of ink liable to be left by the pen at the end of any line which is drawn slowly, even though the pen-knife should be occasionally called into requisition to remove the ends of such lines as have gone over the edge of the square. The pen-knife should not, however, be used till the last thing; as, where the surface of the paper has been disturbed by it, fresh lines are apt to run into blots.

A few delicate washes added to an elaborate drawing in Indian ink, will often produce a good effect by blending some of the tints together; and by softening the shaded parts will somewhat obliterate the evidence of excessive labor. Such washes must, however, be applied with caution, care being taken not to go over any part a second time while still wet. Parts that are too heavy may be lightened somewhat with india-rubber, and still more with gentle use of ink-eraser.



Happy Old Age—H. von Herkomer.

In Mr. Hamerton's 'Graphic Arts,' attention is called to the value of "the black blot" as a technical means in pen-and-ink drawing. We have flat whites in abundance; why not admit flat blacks? All that the artist means by them, is that at those places the darks of Nature went down below a certain level. The holes and corners of picturesque buildings are darker than Indian ink with the light upon it, and so are the shady side of all dark draperies; other darks come nearly up to Indian ink, and others (greys and browns in nature) are just equivalent to it. The flat black represents all these together, quite as fairly and legitimately as the flat white represents luminous greys and greens."

Since the idea of book decoration has largely superseded that of merely pictorial illustration, the use of the black blot is frequently resorted to without any realistic regard to the actual color or shade of

the objects portrayed. It is often boldly used for the simple purpose of satisfying the eye with its rich full effect.

Mr. Herkomer's "Happy Old Age," is a very effective instance of the use of the black blot.

Mr. Ruskin strongly advocates the invariable use of a perfectly black ink, recommending, for instance, ordinary writing ink that has been allowed to stand till it has become thick (but not so much as to clog the pen); believing that "if you cannot gradate well with pure black lines, you will never gradate with pale ones."

A very smooth hand-made paper is perhaps the best surface for pen-and-ink drawing. The granulated surface of rough paper is apt to give the lines a broken appearance, and to hinder the free movement of the pen.

Bristol boards are perhaps the most generally useful, while London boards are to be preferred for any work not especially minute in detail. These cardboards have the advantage that the drawings made on them do not need to be mounted afterwards, and so they avoid all risk of damage while being damped and stretched.

The enamelled paper known as "clay faced" has come into use of late years, especially for drawings to be afterwards reproduced by photo-mechanical processes. It is said to be a coating of china clay with which the surface of the paper is prepared; and its specialty is that black lines can be easily erased with a penknife, while white lines or dots can be added with a needle in any parts that happen to be too dark. A powerful effect which is sometimes useful can be obtained by putting in a solid black — preferably lamp black with a brush — over large spaces of the drawing and then working out the details with white lines produced by a sharp point. Some of Mr. Heywood Sumner's most striking decorative drawings are said to have been done this way. Winsor & Newton's 'Albanine' can also be used to produce white lines of varying thickness on a black ground: for this purpose it is much superior to ordinary Chinese White, as it flows more readily from the brush owing to its having less gum or glycerine mixed with it.

As regards pens, a careful selection in order from the finest is, Gillott Crow-quill — Gillott Mapping pen — Gillott 192, coarse



but still small point — Gillott 303, a shade larger, a very good average size; the last-named have less spring, and so give a more uniform set of lines when required. Gillott 404 is as coarse as is likely to be useful.

Messrs. Perry & Co. manufacture some pens expressly for drawing, which they have numbered thus: 600 Crow-quill pen, 601 Eaching pen, and 602 Tracing pen, all these being admirably suited for fine work.

The penholder sketched is made by Messrs. Woodward, who call it the IXL; it is convenient to the fingers, as being a holder of the usual size, while the pen is a small Crow-quill. One advantage of Gillott's larger pens over the crow-quill is that they do not require replenishing with ink so often. It is a good plan to use different pens for different parts of a drawing, just as an etcher uses different needles on different parts of his plate. All varieties of writing pens can thus be utilized, even occasionally the broad-nibbed J.

For producing a bold line of even thickness stylographic pens of different makes are often employed. The solid glass pen with grooves which hold the ink may be classed with them. It is generally felt to be rather hard and unsympathetic in the handling, but is said to be preferred by the celebrated Vierge, possibly because of the property that pens of this class have of allowing the stroke to be made with equal facility in any direction. Though the lines made with the glass pen are as a rule of the same thickness, yet a very rapidly drawn line will often be perceptibly thinner; and there are sometimes slight irregularities in what should be its perfectly round point, so that it will be found that by shifting the pen a little in the fingers a thicker or thinner line may be produced at will.

For very large work, especially in ornamental lettering, the old-fashioned reed pen is useful; it works very freely and so saves time. The character of type known as Old English, so much used for ecclesiastical purposes, is particularly well rendered by the reed pen.

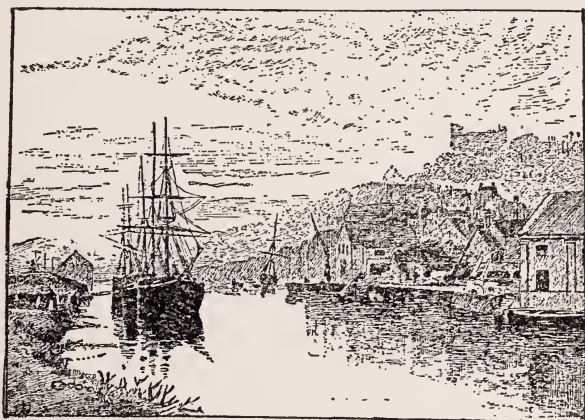
The preparation known by us as Indian ink is really of Chinese manufacture. The true China ink will break to almost a polished surface, and is moderately scented with musk. Indian ink has one quality which is sometimes found to be a disadvantage. It is extremely difficult to remove when once applied to the paper, being very little

affected by the use of a wet brush, sponge, or blotting paper. In this respect, it is the antithesis of charcoal grey, which is a beautiful pearly grey color for monochrome, but attaches itself to the paper so slightly that a second wash, if not very dexterously applied, is pretty sure to disturb the first.

“Ivory black is obtained by charring ivory in closed retorts. It is a full silky black, and is serviceable where the sooty density of lamp black would be out of place. It has a tendency to brown in its pale washes.”

Lamp black is a smoke black. It is not quite so intense and transparent as ivory black, but less brown in its pale washes.

Liquid brown ink is gradually becoming popular, particularly for the



Arundel.—Vicat Cole.

purpose of perspective elevations of architects. Washes of this ink can be used along with the ordinary work of the pen. When compared with the other elevations outlined and tinted either with Indian ink or Sepia, those in brown ink certainly look the most effective. The warm tone of the brown ink, as used in this manner, is decidedly agreeable.

The following is a list of the best Nankin Indian inks: Extra large Double Dragon, Hexagon, Super-super, Mandarin, Pearl, Stork gilt, Square gilt, Lion's head, besides smaller sizes of several of these brands. The Super-super and Lion's head brands are in practice found to be the most generally useful.

For such work in pure line as is required to be very exact for purposes of publication, it is not unusual to employ a finely-pointed sable brush instead of a pen, the result produced being so similar that few would imagine they were not looking at a pen-and-ink drawing. The sable brushes known as 'tracers,' 'liners,' or 'riggers,' are specially adapted to this kind of work, all of them being very long in proportion to their thickness. Any small sable brush may be trimmed with a sharp penknife to the required proportion as shown in the accompanying illustration. Their shape facilitates the task of shading by means of parallel lines of regular width. With practice, considerable rapidity may be acquired; and those who have once become accustomed to the use of the brush as a substitute for the pen, are seldom known to recur to the use of the latter.

In this method of working, such pigments as Indian ink, lamp black, ivory black, are all available as substitutes for the fluid ink. Some draughtsmen add a little gamboge or crimson lake to whatever black pigment they use in order to ensure its photographing properly.

Advice is sometimes given to keep your lines on the thin side as they tend to thicken in reproduction. The printing, if it is done with too thick an ink must obviously widen the lines, or if too much pressure is applied.

In making designs to be reproduced by photo-mechanical processes, it is usual to draw them considerably larger than they are to be eventually printed. This proceeding, by rendering all the lines finer and closer, adds a general appearance of delicacy and finish to the whole. Experience, however, shows that this added finish of execution does not necessarily mean finish of effect, for where great difference of scale exists between the original and the reproduction, the balance of tone is altered and frequently upset. A warning on this subject appeared in "Harper's Magazine," from the pen of Mr. Timothy Cole, one of the ablest living wood engravers. He writes: "The secret of so many recent failures of engravers to do justice to the artist lies in the fact that artists make their drawings too large, and when these are reduced by photography and put on the block very small the engraver is put to a great task in striving to reproduce the original effect; and he fails in the endeavor because through the reduction in size the effect has been lost!" The greys which will

probably compose the chief part of the design, remain substantially the same, while the whites and blacks diminish in importance, so that the usual result when a drawing has been made on a large scale, is, that the reduction is pronounced weak or grey throughout.

In practice it is best to make drawings for "photographic reduction" to a scale of about twice the linear measurement required; in other words, four times the area. If, for instance, the size of the illustrations is to be six inches in height, it is preferable to make the drawings twelve inches; but be careful in these cases to keep the work very open, and the white and black spaces larger than would look well



The Dark Island.—Alfred East.

on the scale being used. To work in this way requires some effort and constant self-control, so as not to put in too much work; the result is that most artists find it on the whole less troublesome to work on a scale nearer to that of the intended reduction. Some artists find that if the linear measurement is one-third larger than the reduction, the latter is found to be sensibly improved in the direction of delicacy without much alteration of general effect. The original of Mr. East's impressive drawing of the "Dark Island" measured about 13 inches by 9, and the drawing of "Grig weels" nearly filled a page of note paper.

A curious fact has come under my observation while trying upon

my friends the effect of tints composed of parallel lines; my object being to see how many lines in a given space were required to suggest the appearance of a wash of grey color. I was, of course, prepared to find considerable difference in the clearness of vision of different individuals, all of whom supposed themselves to have exceptionally good sight. The strange point that came under my notice is that to many persons the same tint of parallel lines produced quite a different effect when the paper was held so as to present the lines horizontally, from what it did when the lines were perpendicular; the commonest case being that what appeared a flat wash when the lines were horizontal, would resolve itself into distinct lines when turned, so that the



Grig Weels.

lines were perpendicular. In other words, one might put it that perpendicular lines are more easily seen than horizontal ones.

When drawing in line for the press, I would give the reader a caution not to go over the light parts of the drawing with either pen-knife or ink-eraser for the purpose of adding delicacy of effect. The interference with the photographic result is much greater than would naturally be anticipated; the lines after this treatment, tending to become broken (or "rotten" as it is called), to an extraordinary degree.

There is an easy device for putting a tint over parts of the drawing which will reproduce along with the pen lines. It is obtained by charging a tooth-brush with the ink, holding it face downwards over the design, and then drawing a match or a knitting needle along the

surface so as to produce a shower or spray of small black drops on the part of the drawing exposed. The parts that are to be kept free from the spray are covered with extra pieces of paper cut to the exact shapes of the spaces to be preserved. It is very difficult to keep the spray even, and it is perhaps most effective when sparingly used to suggest the weather-worn appearance of old stone-work.

Besides this so-called "spatter" or "splatter" method, other ingenious means have been tried for getting a tone with little work, such as blacking a piece of coarsely woven material and pressing it on the paper so as to get a rough imprint of the threads; even thumb-prints such as are used for the identification of criminals have been employed.

CHAPTER VIII.

THE ART OF PYROGRAPHY OR POKER DRAWING.

As a first step, the student must purchase a set of tools, and of these, no cheaper and better selection can be obtained than that comprised in the Pelican Pyrographic Outfit.

All absolutely necessary articles will be found in the box; the platinum "point" or pencil and the cork handle with swivel joint to prevent tube twisting; bottles for benzine, india-rubber bellows, and tubing, and several other articles, the use of which shall be explained.

Platinum is, as most people know, one of the perfect metals, upon which no single acid has any effect. It is the only metal suitable for the Pyrographic point because it possesses the unique property of taking up and absorbing the benzine gas used to obtain the heat, and, as it were, feeding upon the vapor conveyed to the point by the india-rubber bellows. The point supplied with the "Pelican" is of pure platinum, and, although it appears costly, it will outlast two or three cheaper ones in which there is any admixture of other metals.

The interior arrangement consists of a small platinum sheath, partially enclosing a fine coiled platinum wire, which, extending some way beyond it, is again enclosed by the outer and larger sheath of the same metal. This outer sheath is the "point" from which the heat is conveyed direct in the wood.

On the end opposite to the platinum is a small screw with a milled ridge at the base of it. This screw fits into the end of the cork handle, and it must be most emphatically borne in mind, that should the point become too tightly screwed into the socket for the fingers to remove it, the pincers must be applied to the milled ridge *only*, as their use upon the platinum part (that metal being somewhat soft) would undoubtedly result in its destruction. Of course, the point being the only part of the apparatus that comes directly in contact with the wood, it is absolutely necessary that it should be of most convenient

form to suit the artist's taste, as well as the various effects and touches.

For what may be termed general all round service, Fig. 7 is the best.

In concluding my remarks upon the "point," I would impress most forcibly upon the reader the fact that platinum, of which a considerable part of it is composed, is almost as valuable as gold, and should therefore be treated in a manner suitable to its rank among metals.

If it get out of order, or, as the expression goes, "refuses to act," intense heat should be applied by holding it in the lamp for some time and blowing somewhat forcibly with the bellows. If this fail to effect a cure, the safest and best remedy is to send it to the manufacturers, who will repair it at a small cost. Should it become encrusted with potash from working upon a soft wood, in such a manner that heat does not remove it, the extreme point only may be dipped in warm nitric acid, when the corrosion will soon disappear. Care must be taken that the acid is not brought in contact with the brass fitting of the point, on which it would act in a most destructive manner, and the platinum must never, whilst hot, be brought in contact with lead or zinc, as the two metals will amalgamate, and the point be destroyed.

In ordinary use the point will last a considerable time without apparent deterioration. The first sign of "over work" being the appearance of small perforations on those parts of its surface that have had most friction upon the wood. It may then be made useful for a certain kind of work, to be hereafter described, but if not required for that purpose, it can be returned to the manufacturers, who will deduct the value of the platinum from the cost of a new one.

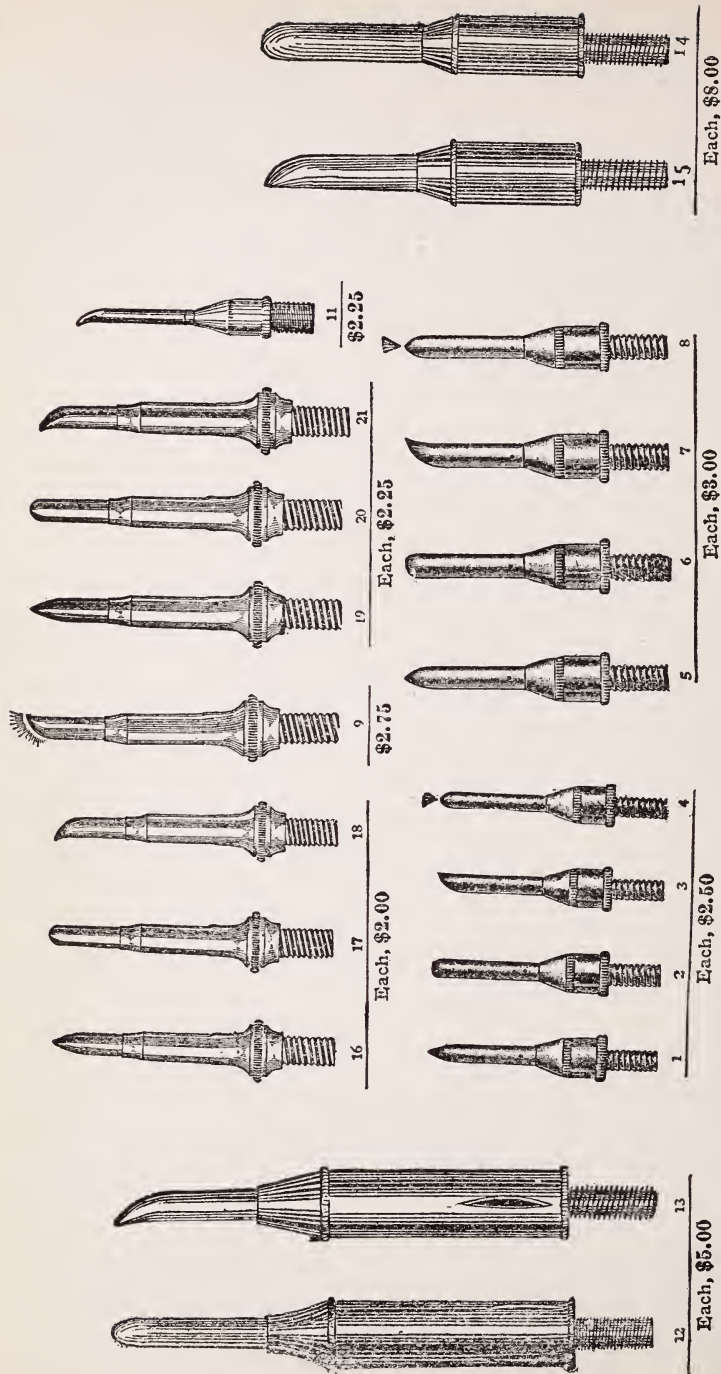
THE HANDLE.

The handle supplied with the "Pelican" outfit is a metal tube about six inches long, with a screw hole at each end, and surrounded by a surface covering of cork.

THE BOTTLES.

Two of these are supplied; one will be required to hold the benzine while at work, the other will be found useful for a reserve supply, as, being stoppered, it does not permit unnecessary evaporation, and being made to fit into the box, it can be put away with the other parts of the apparatus.

PLATE I.



Nos. 1, 5, 16 and 19, sharp pointed, suitable for point and leather work.

No. 11, very sharp and small, excellent for very fine work.

Nos. 2, 6, 12, 14, 17 and 20, flat for broad work and heavy lines.

Nos. 4 and 8, open at end for scorching.

Nos. 3, 7, 13, 18 and 21, curved and pointed, the best all around shape.

No. 9, special scorching point. Recommended above all other scorches.

THE METAL UNION CORK.

This is a hollow tubular arrangement which has two smaller tubes branching from it. Round the body of this junction a cork collar is placed, by means of which it fits tightly into the neck of the benzine bottle.

This brings us to the

INDIA-RUBBER BELLOWS,

to which a piece of tubing is fixed at one end; there is also an odd piece of tubing not at present fastened to anything. If the piece of tubing attached to the bellows be pinched tightly in the thumb and finger, and the smaller ball in the bellows be pressed two or three times, it will be found that the ball surrounded by netting has become inflated with air, which escapes with a puff from the end of the tubing when the pressure of the thumb and finger is removed. It is therefore evident that if the free end of the tube be fastened on to one of the metal forks of the junction and the other fork stopped, the air will find its way into the bottle as long as there is room for it. If, however, instead of stopping the other metal fork we fasten an end of the loose piece of tubing securely on to it, the air, which cannot find room in the bottle, will find its way down the tube. We next fasten one end of the cork handle on to the free end of the tubing, and the other end screw tightly into the platinum point, thus driving the air right into the point, from which it only escapes, after being burned, from a small hole drilled in the side. It will be easily understood, that if the bottle be three-parts filled with benzine, which is of a most volatile nature, the air driven into the bottle by the bellows mixes with and drives out the gas given off by the benzine. This escapes down the tubing into the point, and by its inflammable properties feeds and keeps up the heat there.

THE SPIRIT LAMP.

This should be used with alcohol *only*, and is necessary for heating the point in the first instance. When it is once red hot the lamp can be extinguished, and will not be required again, unless from some accident the point is allowed to get cold.

BENZINE.

The ordinary quality, purchased at a paint shop, has been found best for the purpose.

Should it not possess sufficient evaporating power, an increased amount of heat can be obtained by putting pieces of cotton wool or lamp wick into the bottle, so that points of it rise mountain-like out of the fluid, this will give a larger evaporating surface.

It is well to remind the reader that the benzine is highly inflammable, and therefore must not be tampered with. Under ordinary circumstances there is absolutely no danger in the use of it, but upsetting the bottle near a fire or lamp might result in a serious accident. If by any accident the benzine should be tipped over, immediately raise the point above its level, as should the benzine run into the tube and reach the platinum point, it would corrode it and render it unfit for use.

WOODS FOR BURNING.

This is a subject to which the really *serious* student of Pyrography cannot devote too much attention, if he contemplates a piece of work that is likely to be of some value when completed. The reader will see the truth of this when he remembers that it is absolutely the *ground* upon which his work will appear. In Pyrographic work, if the wood be unsuitable for the purpose, every stroke will be a failure, and if it be the right kind of wood but unsound, the artists' labor will be so much waste of time.

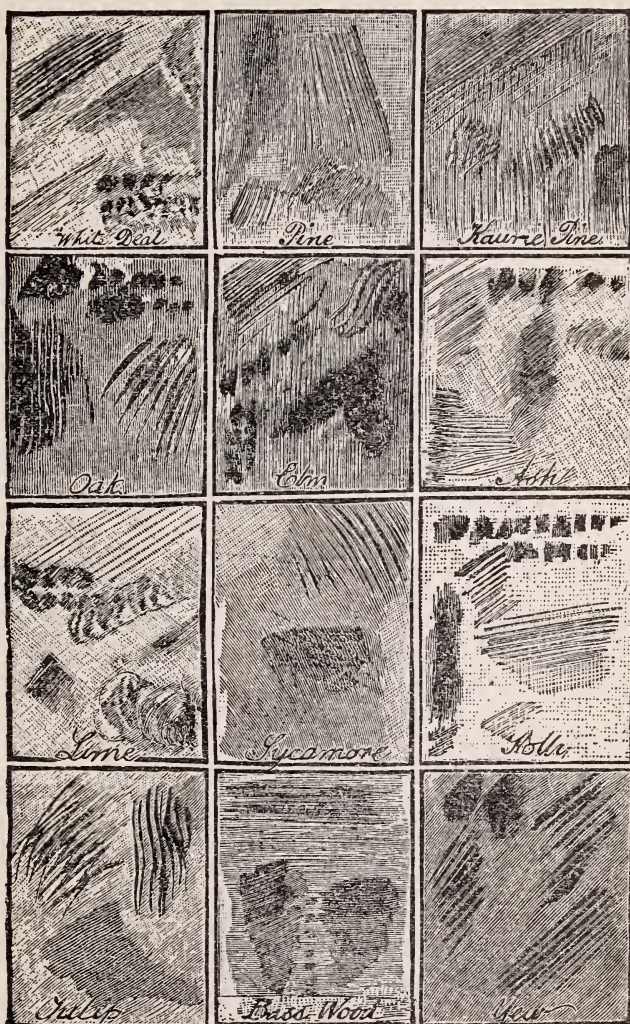
It is therefore absolutely necessary that the wood be sound, free from knots and well seasoned, particularly the latter, for if it be at all green, the heat of the point will cause its contraction on one side, thus giving the picture a boat-shaped appearance, with the chance of its splitting down the centre if an attempt be made to straighten it.

If a board should begin to curve from unequal drying, the best remedy is to put it at an early stage into a narrow-grooved frame, which will keep it flat, and in course of time it will dry all through.

The woods most generally useful for Pyrography are: basswood, oak, elm, ash, holly, lime, sycamore, chestnut, cedar, aspen poplar, tulip, and the wood from Assam tea chests. American white wood presents a very good surface for burning but it is so eccentric in its

grain, and the variations of its color from the different distributions of sap in its constitution, that it is not to be recommended for large or important work. It answers well for beginners to practice upon

PLATE II.



for a general knowledge of touch, and also for small fancy work upon which it is not intended to spend much labor.

Holly, sycamore and lime, all primary homogenous woods, are most excellent for Pyrographic work, large or small, but are best fitted for situations unaffected by weather, and where great delicacy of appearance is required — drawing-rooms, boudoirs, etc.

Oak and ash are solid, useful woods for large spaces, but not fanciful.

Teak is a close, hard wood of good color, but I have had but a limited experience of the effect of burning upon it.

Cedar, tulip and yew are what might be termed colored woods, and prove highly suitable for inlaid work combined with Pyrography, especially in the way of borders.

The wood of Assam tea chests is one of the finest for Pyrographic work in which a clear line is required, especially for outline drawing. It can be obtained of most large tea dealers, but there is generally some difficulty in getting a perfect piece of any size, as it is nearly always more or less "shaky." When, however, a good sample can be obtained, it will well repay the artist's trouble.

Plate II gives an idea of the relative colors of different woods, and the effect of the Pyrographic touches upon them.

Velvet also is a most satisfactory material to work upon, burning away the pile, but of course exercising judgment in the amount of heat used, it being necessary to leave the ground work of the material unscorched.

The velvet should be fastened by the edges to a board so that it will not "ruck" during the work and the pattern traced through ordinary transfer paper, which can be obtained in several colors, blue, orange, white, or black. The hand must be held *over* not *on* the velvet while marking the outline, as the pressure would cause the color to come off in the wrong place and ruin the entire surface.

Excellent effects are obtained on leather, but many people object to the very unpleasant odor which arises when heat is applied to the surface. A great deal of decorative work on pillows, table-spreads, purses and decorative skins for screens, table-covers, wall-hangings, etc., is now being done on this material.

PROCESSES AND MANIPULATION

We will imagine that the student has the full "Pelican" apparatus before him, each article corresponding to the written description. The bottle must be about three-parts full of benzine and the metal union cork fixed firmly into the neck so as to allow of no escape of gas. On one arm of the junction will be fixed the india-rubber tubing which carries the bellows, and on the other that loose piece to the other end of which shall be attached the cork handle and platinum point.

The spirit lamp being lighted, everything is ready. The small panels supplied with the outfit do excellently to practice upon.

The operator must now take the cork handle, pencil-wise in his right hand, and hold the platinum point (No. 7 is the best for all-round work) in the flame of the lamp for two or three minutes, a new point with the burnish on may require to be held a trifle longer. He will then take the bellows in his left hand and compress it, driving the benzine gas from the bottle along the tubing into the point, which will quickly become of a glowing red heat, and will continue so, while the pressure on the bellows is maintained. The lamp can now be extinguished, but it must be remembered that the point will "go out" also, if the bellows be neglected, therefore no matter what the right hand find to do, the left hand must attend to the blowing; and if the point be put down, care must be taken to place it in such a position as not to injure anything by contact.

Having to work the inflator all the time, may at first appear a hindrance to the work, in the same manner that blowing for oneself on the harmonium sends all the notes wrong until one gets accustomed to it; and the student will feel strongly tempted to engage the services of a "blower." I would, however, advise his not doing so; the first slight awkwardness of working the two hands differently being overcome, he will find that they work much more intelligently together than would be possible if they were not guided by the same brain; a little practice will prove this satisfactorily, and the result be quite worth the time so spent. The student having the glowing point in his right hand, the inflator of the bellows in his left, and a trial piece of wood before him will now begin his trial strokes, and will be almost certain to find that each one begins or ends with a Dot. This

Dot is the unfailing enemy of the Pyrographic student in his first efforts, and arises simply from his unconsciously resting his point on the wood at the beginning and end of his stroke.

The Dot is really *the* difficulty in Pyrography, and nothing but practice is required to overcome it. I would lay particular stress on this, as so many beginners appear discouraged at finding their first efforts comparative failures, but it always comes right in the end.

The stroke should be put on with a sweeping motion with no halt at any part of it, and I would advise the artist practicing this only, until he is able to make a clean line of any length in any direction. Next should follow curves in all directions, until great freedom of hand in the use of the point has been obtained.

Of course a previous knowledge of pencil drawing in all its branches will render much of this unnecessary, but it is most important in Pyrography that the artist put his touches, lines, or curves with confidence, as hesitation or blundering at a critical moment may spoil an otherwise successful work.

It is almost impossible to give the amateur any definite instructions as to the actual manner of holding the point, beyond the one unfailing rule, that if he grasp the handle too low down, he will be reminded in a startling manner that he is "writing with fire."

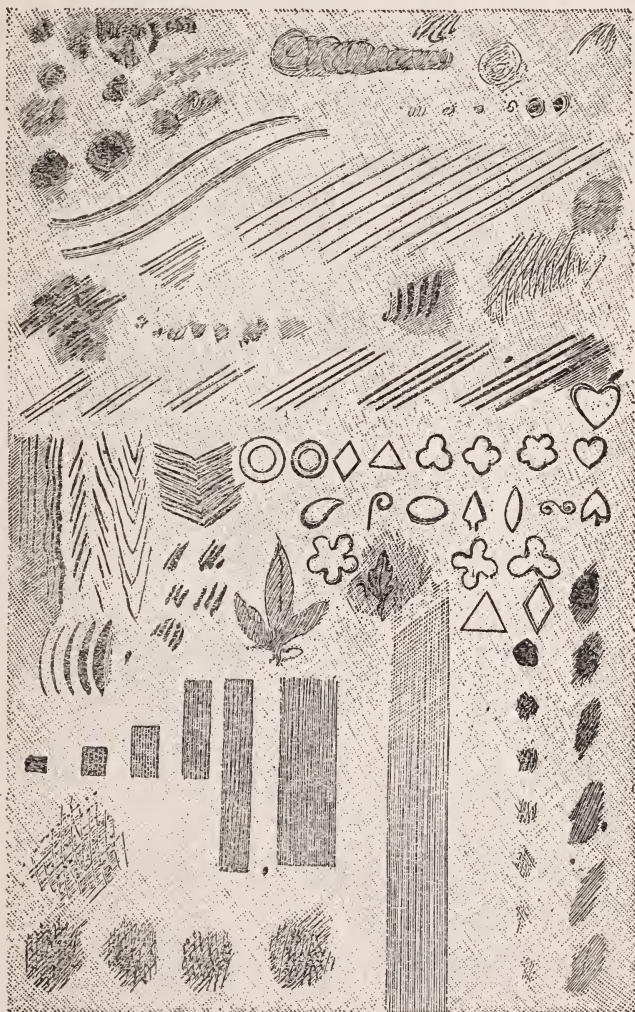
It is safe to say, that any way in which he can obtain exactly the effect required, is the right way, and only by practice will he become master of all the "manœuvering" of which the point is capable. There is, however, one thing to be borne in mind, namely, that if the little escape hole before alluded to, be held downwards whilst at work, the hot air rushing out will scorch the wood, and take from the sharp appearance of the lines, which in some cases has an injurious effect upon the work.

It is also noticeable that the two sides of the point do not work equally, so that by altering their positions different directions of line can be obtained, and at the risk of being laughed at, I would say, that the point seems to work better if changed occasionally from one side to the other, almost as if it had gathered fresh power after a short rest from its labor.

The light in working should be fairly strong, and coming from the left, so that no shadow is cast upon the work, and as gaslight does as

well as daylight, Pyrography can be made a pleasant winter occupation. This will be especially appreciated by a large number of persons who are engaged during the day, and need some amusing but not

PLATE III.



fatiguing relaxation for the evenings at home. The skilled artizan would find his exact, mechanical training, of great help to him in the more conventional and geometrical branches of the art.

Plate 3 shows an exercise in various "touches" which the artist would do well to copy as nearly as possible with the point. He will be able, after some practice, to do so without any difficulty, as they are all facsimiles of touches originally burnt upon the wood. The upper half of the plate needs no description, being simply dots and lines of different intensity and at different angles, curved lines, graduated lines and a few of the most important "pattern touches" before described.

At the top of the lower portion, in the centre, is a suggestion of a leaf, which, though comparatively light in tone, shows dark against a still lighter background. The seven rectangular diagrams below it, show the effect of a certain amount of tone differently distributed; the palest in the long column-like figure, increasing in tone in exact ratio as it decreases in size to the smallest figure on the left-hand side. The lines of dots on the right-hand show a gradation from the deepest to the palest tones on surfaces of the same area.

The next figure gives a tone obtained by very minute dots and lines, and the last four figures show an increasing depth of tone obtained by crossed lines of very slightly differing intensity.

The careful reproduction of this page with the point will form a splendid exercise in Tone and Touch, from which the student will obtain immense benefit for his later work.

Large, bold subject, such as Lilies, Irises, Sunflowers, Daffodils and Marguerites are the best to choose from in the floral world, while for foliage only, Oak sprays, Blackberry, Laurel, Vine and Virginia Creeper are very adaptable; in fact, the work of reproducing in Pyrography is much simplified when such subjects are chosen, as have very distinctive shapes and outlines.

In all work it is advisable that the artist first gets the outline correctly in pencil, before commencing with the point, as a mistake in the burning would be fatal in anything so fine and delicate as the petal of a flower, where the utmost softness and purity are required.

A pale, fine-grained wood, such as Basswood, Holly or Sycamore, should be chosen. The outline should then be carefully pencilled in, and the artist must decide whether he will leave the background, and let his design show dark against it, or darken the background, leaving the flower in lighter tones upon it. This is of some importance, as

if he decide upon the latter course, he must draw his stalks or branches in double outline, so that each line becomes part of the background

PLATE IV.



when he fills it in, otherwise all the stalk will be merged in the background.

Light upon dark is perhaps the most effective method, although greater care is required in shading the flower, there not being so many

touches among which to cover a mistake; our enemy the Dot, for instance, would show with glaring distinctness on the white petal of an Arum Lily treated in this manner, but would be much less noticeable if the other method were adopted. The background will also require to be done with great care and patience, so as to obtain an even tone over the entire surface; indeed, it often happens that the background takes nine-tenths of the time. Plate 4, figure 1, gives an indication of varied directions of line and other touches suitable for backgrounds, the simplest and quickest being that from right to left downwards, as in writing. A in plate. Next would come lateral lines only, as in G; this is a good background to relieve portraits. D is the well-known mixture of lines and dots so frequently seen in engravings. B is composed of lateral and vertical lines, and is a good background for objects drawn on a large scale. It must be remembered in all cases, that the background should be kept subservient to the main design, and not chosen so as to give a broken-up appearance to the whole, or worry the eye in contemplating it. For a group of flowers, those marked E or K would be very effective, of course making it darker in tone if preferred. E being tone and fine line combined, K "hatched" lines only. For the flower itself the point should be of a moderate heat, that is, barely red-hot, as it is not requisite that any of its lines be very dark, and an ugly black line would be a great disfigurement. For the background it may be used hotter, and should be very hot if the artist desire to burn away part of the surface so as to leave the flower in low relief; this may often be done with a very good effect.

LANDSCAPE.

This is a phase of Pyrographic Art in which I have intense interest, and it is hoped that many who read this book may share in my opinion, that the reproduction of nature's beauties is a most absorbing and fascinating occupation.

With the "Point" most exquisite pictures in one color may be painted; anyone who loves etching, pen and ink or sepia drawings will be charmed with them. I would advise the beginner in landscape drawing to make a series of pen and ink sketches from nature, giving great attention to the main lines, and adding detail according

to the time at his disposal; above all, he should store his mind with regard to natural facts to be depicted, or even make small pencil notes on the sketch, which could afterwards be fully carried out on the wood. A view should be chosen most suitable to the shape he wishes to fill, and not wider than the eye can conveniently take in. The first should be merely a simple study, with not too much foreground, or the artist will not know how to dispose of it, and will most likely get weary and disgusted, when he feels it in any way beyond his power. A few separate studies of large foreground leafage, carefully carried out, will give a most decided grasp of the treatment of foregrounds, and will be very beneficial to the amateur. There must not be too much thin detail in the sketch, particularly light foliage in front of massive forms, such as birch trees, which will be found too spotty; in fact, unspotty subjects should always be chosen.

Trees without foliage will repay careful work. Tree trunks also, on a grand scale, with a large foliage of Burdocks, etc., at foot, are very good.

Clusters of old cottages, with their various angles of roof line, also old streets and hostleries will well repay the artist's labor, but new buildings having a particularly trim and neat appearance, should be avoided as unsuitable.

THE SKY.

It will be seen that the judicious rendering of this part of the landscape is of considerable importance, it being, as a rule, by far the lightest portion of the picture, and the utmost tenderness and delicacy should be given to it. Most beginners get the sky too dark, and thereby throw out the "values" of the whole subject. This can be retrieved in a measure by the judicious use of glass-paper. The whole landscape should, as a rule, be kept in mezzotint, with only a small surface very light, and that gradated, but at the same time, I may remark that there is equally great value in leaving the white. A very small portion of the white will give light to the picture and value to the rest of the tones.

Pure black, either in Pyrography or Painting, should be most cautiously and sparingly used, its chief value being to show off other colors. There should be positively not a quarter of an inch over its

whole surface of exactly the same tone; thus light and atmosphere will irradiate it.

PLATE V.

*Fig. 1**Fig. 2*

Figures in landscape should be but few, and not worked up in such a manner as to detract from the general effect of the picture.

CONVENTIONAL DESIGN.

By this is meant the arbitrary, and decorative treatment, of objects natural or otherwise, and many people are of opinion that this is a branch of art which is more suitable than any other to Pyrographic work.

In natural objects, the leaves of oak, laurel and vine will be an endless source of design; pendant fruit, with birds, make a further variety, the wings of the latter being often very beautiful in their outline, and the contemplation of the manner in which the Acanthus leaf has been treated in classic ages, as an adornment of architecture, will suggest a variety of graceful and growing curvature.

Plate 5 gives an idea of the natural and conventional treatment of foliage, the first being a spray of laurel drawn naturally, and therefore to a certain extent freely (with scarcely two leaves alike in shape), as Nature shows it. The second represents a spray treated in a more severe manner.

Heraldic and Grotesque Designs will form another departure from previous branches. This is a form of work which will apply suitably for armorial bearings on furniture to be afterwards polished, or upon shields for hall decoration. Borders enter largely into the decoration of small articles, i. e., tables, frames, etc. Plate 6 gives a few suggestions that may serve to direct attention to this subject.

LINE.

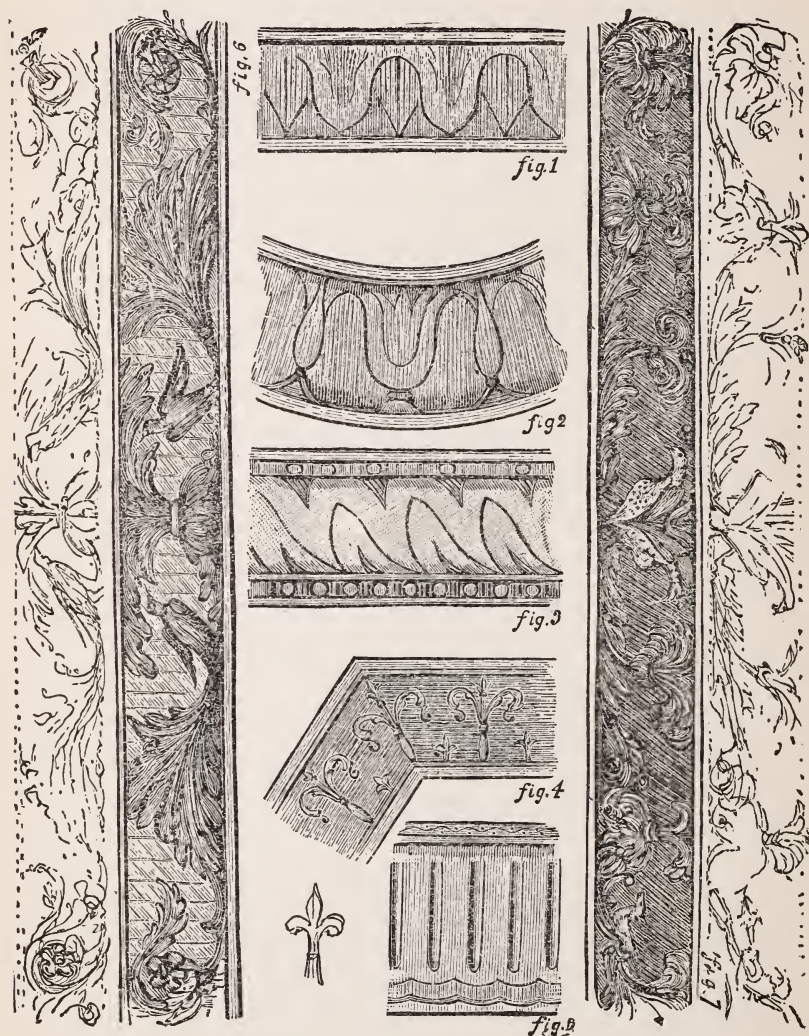
The size of line must be borne in mind, and adapted thoughtfully to the spaces to be etched. The direction of line is also of vital importance, that is, curved lines to show roundness, vertical lines for vertical spaces, etc., etc. Variety of line will give variety of texture, from the extreme delicacy of flower treatment, to wild and rocky scenes in landscape, and most picturesque pieces of architecture.

Width and depth of line should also be carefully considered, and perhaps the best effects will be obtained by keeping the pale, faint, lines closer together than the deep ones, which will necessarily be wider of themselves.

I have noticed that some lines made by the point have a meagre,

wiry look, that is decidedly not artistic, and I would particularly caution the reader against it. Sometimes it occurs through some eccentricity of the piece of wood in use, and sometimes through par-

PLATE VI.



tial loss of power in the point, from its becoming encrusted, the artist will do well to keep the point always clean and bright.

A *ruled* line should never be apparent in Pyrographic work unless

in connection with borders, as it gives a mechanical and labored appearance to the work. The "burr" or "ghost" caused by the heat of the point on either side of the line should be carefully watched, as, if properly treated, it may in many cases be made a useful auxiliary instead of a defect, especially for obtaining softness, and also, what may appear strange, varieties of *hue* as well as tone; but the reader must remember that there is a decided difference in the color of light and dark touches.

MISTAKES AND ACCIDENTS.

When a serious mistake occurs at the beginning of a piece of work, it will be found the simplest way to have the wood re-planed and begin afresh. If, however, it be on a sunk surface, or in any position where this method is not available, the error should be erased as far as possible with glass-paper (No. 0 or 1), and the deeply-burned parts be picked out with a needle or fine etching tool. A penknife should never be used, as it is liable to splinter up the wood.

Slightly "bitten" errors may generally be remedied by rubbing with glass-paper only, but the artist must take care, that upon soft wood, he does not rub away sufficient to leave a groove, which will in a slight degree affect the light and shade of the picture. A rubber eraser will remove light shadings.

NEGATIVE PYROGRAPHY.

This is a variety of treatment in which the Scorching Point can be used most successfully. If held rather close to the wood some excellent tone work may be done with it, creating what we might call a negative process of etching. A worn-out point that from long usage is no longer of service for line work, forms a very good makeshift also for this purpose.

The student would do well to remember this when a point becomes apparently useless, and thereby make it a valuable auxiliary to the new one.

There is also another "negative" method by which a very good and soft appearance might be given to the work, that is, by scorching the entire surface of the wood in an even manner, and afterwards scraping out the various light and middle tones of the design with

glass-paper and bits of glass. This may be done until the lightest parts of the design are really hollows in the wood, which yet appear to project from the dark background. For large, solid, fruit and flowers, such as peaches, roses, etc., this is very effective, but great care must be given to the management of the light and shade.

PYROGRAPHY AND PAINT.

I most strongly deprecate the uniting of stains or pigments with genuine Pyrography. Painting and Burnt-wood Etching are totally dissimilar, and the amateur who begins by "touching up" his work with oil or water-color pigments, will end most likely in producing hybrids that are neither natural pictures nor etched monotints.

LUSTRA COLORS.

These, as an adjunct to Pyrography, do not come under the above remarks. They are totally different to ordinary pigments; and they would not be put in the *place* of point work, but rather to enrich and adorn what is already there. They may therefore be most beneficially employed as an embellishment to many kinds of Burnt-wood Etching. Used upon leather they are most effective, producing a richness not to be obtained from the point alone. Screens, chair-seats, etc., finished in this way are very handsome.

Lustra Colors will apply to Heraldry, Japanese decoration, and as tips to the plumage of tropical birds, etc. I would advise that in putting them on care should be taken to entirely cover the "ground," i. e., to hide that portion of wood or other material where they are employed, and, in some instances, doubtless, a good result may be obtained by laying them so thickly upon the wood as to show in slight relief.

The beauties of Gold and Silver united with Pyrography will be easily discerned by the reader. Gold agrees with all colors, being in itself a glorious neutral. Silver, also, has particular and symbolic qualifications. Many experiments might be made, but no inferior preparation of the metals should be used.

LEAVING THE WHITE.

This has been previously mentioned in regard to obtaining gradation in Landscape, but I would now call attention to it with reference to quite another division of Pyrography, that is, Geometrical, Arabesque or Diaper designs. In this instance, a splendid effect can be obtained by leaving, as it were, "gleams" to shine through the pattern, in the same manner that threads of gold and silver, or brilliant colors are woven into fabrics.

Diaper patterns are very excellent for covering flat surfaces with an even decoration, where an appearance of general richness is more to be desired than any particular point of ornament, and the sudden transition from this ornamental richness to adroitly managed plain spaces is very telling. I am especially referring to designs upon a wood that is light in tone.

POLISHING.

For designs in which the background is deeply and roughly burnt, two or three coats of French Polish put on with a soft brush and allowed to dry between each layer, will be found a great improvement.

When, however, the surface is moderately flat, it may be put on with a rubber in the ordinary way, a small quantity of linseed oil being used with the polish to cause the rubber to glide smoothly over the surface. The rubber is composed of a piece of common wadding covered with a piece of soft rag. The polish must be put on the wool, and the rag put over it so that it soaks through evenly; a little oil can then be put on, and the polish applied to the surface of the work. The rubbing should be in a circular direction, and the pad not allowed to *rest* on the wood or it will drag off what polish has been put on. It should be done in a warm place, so that it dries quickly. When a good body of polish has been put on, what is called "spiriting off" should be begun.

This is the application, with a clean rubber, of a small quantity of alcohol to clean off all the linseed oil and give a clear, bright surface. The spirit must be put on *very* lightly, so as not to disturb the surface of the polish. An odd piece of wood should be polished as a first attempt, in case of failure, but half an hour's instruction by an expert

will be of more service than all we can write. A very excellent wax finish comes especially prepared for burnt-woods. It is called Pyrography Wax Finish and produces a very soft mellow tone. There is also a shellac varnish which makes a harder and more durable surface.

TO CLEAN PYROGRAPHIC WORK.

India-rubber and art gum will be found most efficacious, but care must be taken in rubbing fine work not to press so heavily as to injure any of the most delicate tones. Pencil outlines can be taken out with india-rubber. A curious blue tint is given to the work by allowing some of the pencil marks to show among the burnt lines, which in some cases is not unpleasing.

CHAPTER IX.

FLAT SHEET METAL WORK.

With a very little outlay many beautiful pieces of brass and copper work may be turned out. And it is not difficult to work with the thin sheet metal.

When sheet copper or brass is very thin it may be cut with strong scissors almost as easily as cardboard. When there are small openings into which the scissors will not pass, lay the sheet on the anvil and cut them out with a narrow cold chisel, using a hammer; or else, opening a small hole with a drill or nail, use a file. When the sheet is too thick for the scissors, use shears; and when these fail, then you can either cut out the whole pattern with the cold chisel and hammer, or else, taking a fret-saw, treat it like a sheet of wood.

Thin sheet metal can be easily cut with a common fret-saw, such as is used for wood, but for thicker metal work a saw with a thinner blade and narrower frame is employed. Fig. 3. Of course, a hole is first made in the metal with a drill or round file, the saw passed through it, then fastened, and the cutting is executed by working the saw up and down. Whatever can be cut in wood or paper can be done in sheet metal, even to the most incredible fineness.

Figures of men or of animals, heads in profile, birds, butterflies, flowers, grotesques, arabesques, or, in short, anything *in outline* can be cut from sheet metal.

The surface of sheet metal work may be decorated in different ways: (1) by *repoussé*, or working on it with hammer and tracer and stamps, which will be described later; (2) by *engraving by hand*, which may be sufficiently well learned for mere line work in a few days; only

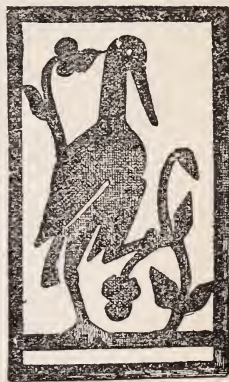


Fig. 1.— Small Panel Cut Metal.

two or three gravers of hard steel are needed for this (Fig. 4). The lines are cut by projecting the point and pushing it forward, not by scratching towards the operator. The art is not difficult to acquire,



Fig. 2.—Fret-sawed Sheet Metal.

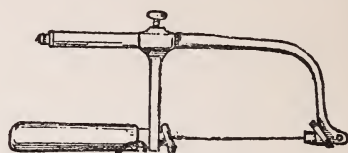


Fig. 3.—Fret-saw.

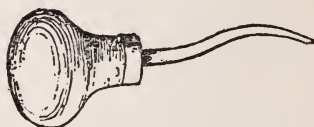


Fig. 4.—Graver.

and when learned, is applicable to wood-engraving, ornamenting the surface of metals, shells, and other substances; (3) by *etching, or engraving with acid*. To effect this the iron or other metal is covered with a thin coating of wax, care being taken to make a little wall of wax all round the work — or else with varnish — then with a “point,” or a pin or needle in a holder, scratch the design in the coating so as to expose the metal; this done, pour on it a mixture of about one-third nitric or sulphuric acid to two-thirds of water, and with a feather remove the little rows of bubbles which will at once begin to form. After ten minutes, pour out the acid and water into a cup, dip the plate into water before handling it, then remove the wax, or wash away the varnish with turpentine, and you will find the design eaten into the metal; the wax may be quite taken away by heating it. If there are any imperfections in the etching renew the process.

A very beautiful decoration for any box or chest or door is made by cutting out either true or false hinges from thin sheet metal and screwing them on. A false hinge is only the ornament applied to

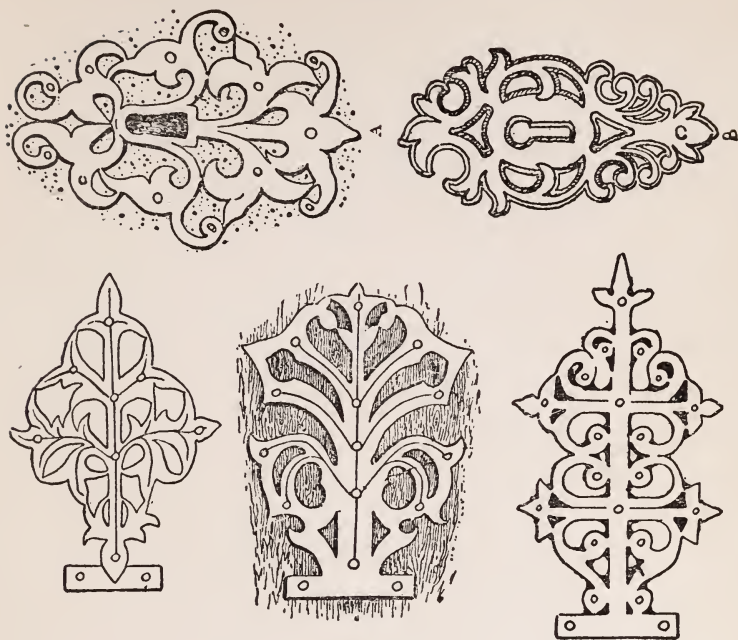


Fig. 5.

the edge of the hinge on which the lid turns. See Fig. 5. The same patterns may be used for book clasps.

REPOUSSÉ ON WOOD.

To begin, let the pupil obtain a good panel of *soft* pine wood, let us say of six inches by six, or any other suitable size. It must be free from knots or defects, and about three-quarters of an inch in thickness. A heavy table or work bench is needed to work upon.

The next thing to lay in a stock of is *material*. Brass is sold in sheets of from six to twelve inches, but may be had of greater width. It is of all thicknesses, from that of note paper up to half an inch. No. 25, or as we may say, so thick that it can just be cut without great effort with the shears, is suitable for beginners and for most work. Be sure that you get good clean metal, free from red or copper spots, holes, or scales.

Copper, red metal, tin, and even thin pewter sheets, are also worked in repoussé. The copper should be soft sheet copper, gauge 21.

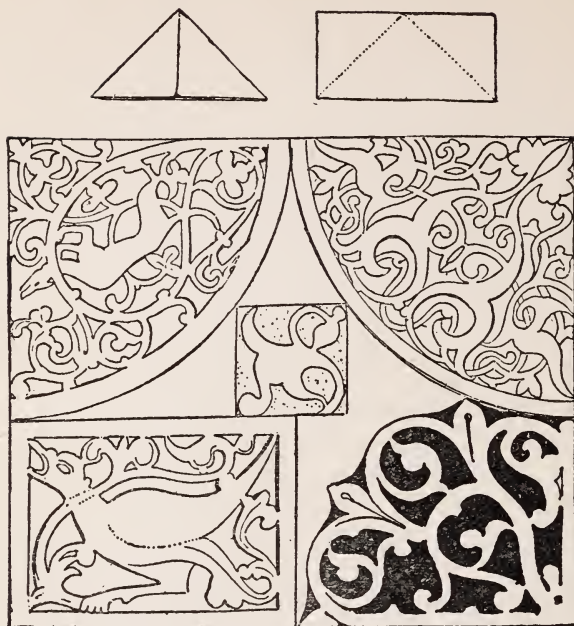


Fig. 6.—Corners for Books.

The tools needed are as follows:

1. *A Chaser's Hammer.* An ordinary light shoemaker's hammer with a sound broad head may be used when the former cannot be obtained. Fig. 7.

2. *Tracers.* These are tools which look like large headless nails, or pieces of nail rod. The simplest is the straight tracer, which is at the end exactly like a screwdriver. I have sometimes used one of the latter when I had no other tracer. There are also curved tracers, meant to indent all kind of curves, such as the entire side of a leaf at once, a whole small circle, every bend in an S of any size, so that some workmen possess them by scores or hundreds. But it may be here borne in mind, once for all, that the first thing to do is to *master* the plain straight tracer in two or three sizes, and learn to make with it any kind of a line or curve. To do this — which can be effected in a few days, with determined application — is to master the whole art of repoussé in low relief, or on the face. There is another kind of

tracer, the edge of which is like an extremely fine saw. This is used for finishing, and produces a neat dotted line. *Vide* Fig. 8a.

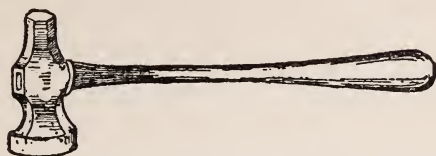


Fig. 7.

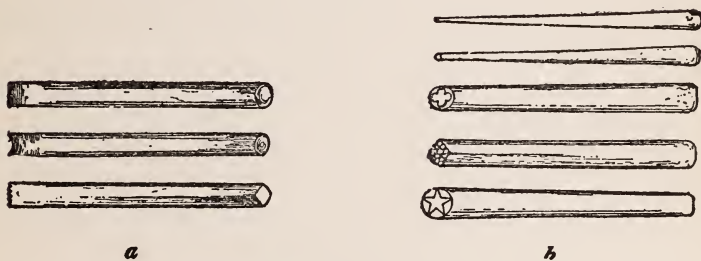


Fig. 8.—Tracers and Matts.

3. *Matts or Stamps*. The simplest of these is a round nail with a dulled sharp point. They are used to roughen or indent the ground between the patterns. This, as a tool, is called a *pick*. Other matts are cross hatched, like office-seals, or with points like a small o, or stars or crosses, leaves or flowers. One like the flattened point of a round nail is most common. *Vide* Fig. 8b

4. *Border Tools* are large matts or stamps. Where we have, for instance, a border of two lines run with a tracer, we may repeat in it at regular intervals, side by side, a circle or a cross of four semicircles, a diamond or a leaf. For these special stamps are made. But even these figures can be made with a flat small tracer of one-tenth of an inch (-) with care.

5. *A Ball Tool*, Fig. 9a, is a punch or matt with a round end, like half a pea. It produces an indentation.

6. *A Cup Tool*, Fig. 9b, is the reverse of the ball tool. It produces a round rising relief. Similar tools, both hollow and in relief, of diamond, or oval, or star, or other shapes, are sometimes used.

7. *A small block of metal for riveting.*

8. *Small copper rivets.*

9. *A hard steel graver.*

10. *A hardwood block, about 12 inches by 4 inches by 3 inches.*

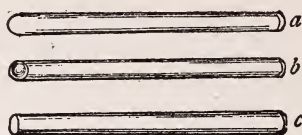


Fig. 9.



Fig. 10.



Fig. 11.

11. *20-, 10- and 6-penny wire nails.*

12. *Fine emery paper.*

13. *Round pliers.*

14. *Flat pliers.*

15. *Small pair of metal shears.*

16. *Metal vise.*

17. *Small rivet set.*

18. *Half-round file.*

19. *Rat-tail file.*

20. *Hardwood mallet with a 6-inch head.*

21. *Medium wood rasp.*

22. *Flat pliers.*

23. *Round pliers.*

24. *Nail set.*

In addition to these, the beginner will require a very black soft lead pencil, thin but very tough strong paper, carbon paper, black or blue, and an agate or bone or steel point. Also small screws.

The panel of wood and the brass should be of the same size, and the brass should be fastened at the edges with the small screws. Do

not use tacks or small nails, as they are apt to pull out. Let them be about one inch apart. Fig. 10.

Then draw on the brass a straight line, or a number of lines, either with a lead pencil or ink, or a crayon pencil, half an inch apart. Take the flat or smooth tracer in the left hand, hold it vertically, and *while moving it along* keep tapping on its top with a hammer. The motion of the tracer and the tapping must be simultaneous. As a preparatory exercise you may take a piece of cardboard or very thin metal and draw a line by hand without the hammer. This will give you an idea of the line to be produced. It must be even, or *without a break*. Do not first stamp the tracer, as many do, and then repeat the mark. Run it on continuously.

The tracer with a dotted edge for finishing is not, however, *run* along. With it you make successive marks, taking great pains to unite them in a clean line. This finishing may or may not be executed, according to the work.

When you can run a clean straight line, and not before, draw long curves and run them in like manner. Such curves joined form leaves. Fig. 11. Do not make these lines too lightly nor too heavily.

You may now draw a simple pattern, say a circle or leaf. Take any simple matt, and with care indent the ground round it. Bring this indentation close to the line made by the tracer. Then go lightly over the line made with the tracer. Figs 12-14.

Let it be impressed on the mind that the pupil, before going further, must learn to run the lines and execute the matting or grounding with perfect ease, confidence, and accuracy. One hour of earnest work at this stage may save weeks or months of feeble and amateur-like labor in the future.

To prepare brass for work, either pass it through a roller if it be not perfectly smooth, or else iron it flat with a common flat-iron. Then rub the surface with fine sand-paper, or with pumice stone or emery powder. Then screw it to the board. Have your brass an inch larger than the pattern all around to fasten screws into. When finished this border is trimmed off.

To draw the pattern on brass, execute it first on thin strong paper with a very black soft lead pencil or with a crayon pencil. Then lay this, face down, on the brass. To hold it in place you may gum the

edges to the metal. Then with an agate burnisher or a paper knife, or any smooth hard substance, rub the back, and the pattern will be transferred. If not quite distinct, draw it over with pencil or ink.

Another way is to lay black carbon paper on the brass, and on this the design, and go over the whole with an agate or bone point, or even a *very* hard lead pencil.

Having the pattern on the metal, outline it with the tracer, and note that the accuracy and clearness with which this is done will determine the value of the whole work. Then execute the matting.

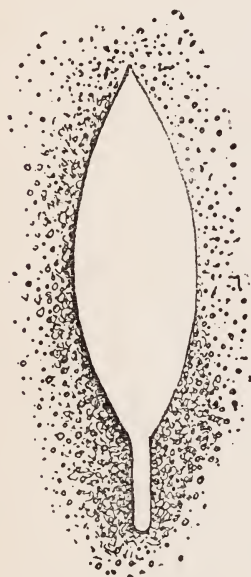


Fig. 12.

Simple Exercises.

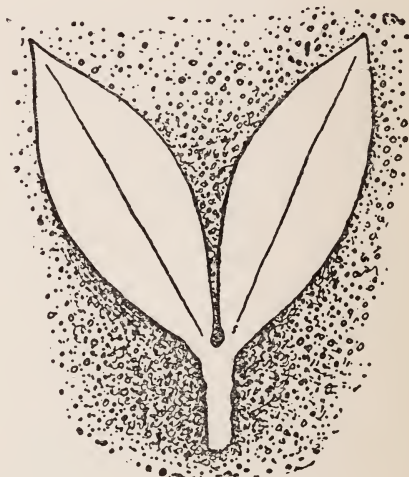


Fig. 13.

Take great care not to cut through the brass; if you attempt to produce a finished line at the first effort you will be sure to do this. To avoid it go over the line.

If the pupil finds that after much hammering the brass becomes hard, and brittle, and breaks easily, it may be softened by laying it on a fire till it is quite hot, or even red-hot. This process is called Annealing. To dispense with it, endeavor to avoid too much beating and needless repetition of matting. The art of producing the most effect with the least work will come with practice. As a rule, anneal-

ing is seldom required in working on wood. If the brass be cut through, any tinsmith will solder the breaks, but it is well to learn to do this yourself.

Where there are very small curves and corners, the worker must use the smallest curved tracers, and the pointed matt. With a little experience he will soon overcome all such difficulties.

It was entirely from its great cheapness, ease, facility of transport, and cleanliness, that brass-work on wood became very suddenly popular, and if *repoussé* on cement has since followed in its wake and is



Fig. 14.—Study of Simple Flower Form.

now extensively followed, it owes its prosperity to the beginning made by the former.

Repoussé can also be admirably executed in *raw hide*, i. e., of oxen or cows, which, when dry, is hard and yet tough.

It is worth noting that all the process for working sheet brass on wood is almost exactly applicable to sheet-leather work, so that in learning one we learn the other. Even the same tools are in a great measure used.



Fig. 15.—Repoussé, worked with Fine Tracer or Eached.



Fig. 26.—Paper Knives: *a*, Sawed Brass; *b*, *c*, Repoussé.

Relief may be increased by placing on the wood layers of pasted paper, felt, or card, or pasteboard, the use of these depending on the thickness or quality of the metal. Willowwood, when it can be obtained, admits of a very deep relief.

All kinds of lines can be executed on metal surfaces by stamping



Fig. 17.—Salver.

with the hammer, but for these, of course, different *matts* or tracers are needed. With a very small and not too dull (nor too sharp-cutting) tracer (e. g.—), and with one or two slightly curved (e. g. Fig. 8a), one can execute hair on animals, and in fact all the ordinary details of pen-drawing. Care must be, however, taken not to cross over or mix lines when it can be avoided. Most beautiful

lanterns, lamp and candle shades are produced by perforating the entire background so as to leave the design intact, or sometimes beaten into slight relief. The light shines through these perforations, and when the article is lined with colored silk or paper, makes a very



Fig. 18.—Design for Salver.

rich effect. A tool having a dulled sharp point (like the uppermost in Fig. 14b.) is used. An ordinary wire nail will serve the purpose very nicely if very thin metal be the material employed.

Other designs show a pattern with most of the background cut

away by a fret-saw or sharp-edged tool. The design is held together by little strips of metal which are left as in the manner of a stencil. Some of the newest and most exclusive patterns show this manner of work. A flange is left at one end of the shade, to lap under and form the seam. This as well as the opposite edge is perforated for rivets which are perfectly fitted and fastened by a sharp blow of the hammer. The edges of the shade are then turned under, and these borders may be finished by a row of rivets as ornamentation.

It is not unusual, even when there is a large surface covered with a small embossed, chased, or repoussé pattern, to polish the whole



Fig. 19.— Bellows.

equally. The result is to greatly diminish the contrast of light and shadow, which it is the real object of embossing to produce.

But while the pattern or relief should, it is true, be kept well polished, the ground may in many or most cases be even darkened slightly to advantage, as by rubbing paint or sulphate of ammonia into the minute dots and scratches of the matting. It is not merely because this makes an object look antique and interesting that this effect is beginning to be imitated so much in art, it is because it really produces a vivid relief, and contrasts shadow with light, also defining the pattern more distinctly.

INDEX TO THE AMATEUR ARTIST

IMPLEMENTS AND MATERIALS:

PAGE

Palettes	1
The dipper.....	2
The palette knife.....	2
The easel.....	2
The rest or mahl-stick....	2
Brushes	2
Hog-hair tools.....	2
Sable brushes.....	3
Badger tools.....	3
Canvas	4
Academy boards.....	4
Grounds	4

COLORS:

Flake white.....	4
Aureolin	5
Naples yellow.....	5
Yellow ochre.....	5
Transparent gold ochre....	5
Roman ochre.....	5
Raw sienna.....	5
Brown ochre.....	5
Cadmium yellow.....	5
Pale cadmium.....	5
Chrome yellow.....	6
Lemon yellow.....	6
Indian yellow.....	6
Yellow lake.....	6
Italian pink.....	6
Vermilion	6

PAGE

Indian red.....	6
Light red.....	6
Venetian red.....	6
Cadmium red.....	6
Madder lake.....	6
Crimson lake.....	6
Scarlet lake.....	6
Purple lake.....	7
Lac or Indian lake.....	7
Ultramarine	7
Ultramarine ashes.....	7
French blue.....	7
Cobalt blue.....	7
Prussian blue.....	7
Antwerp blue.....	7
Indigo	7
Ivory black.....	7
Blue black.....	7
Lamp black.....	7
Burnt sienna.....	7
Mars orange.....	7
Orange chrome.....	8
Orange vermillion.....	8
Vandyke brokn.....	8
Cologne earth.....	8
Cappah brown.....	8
Bone brown.....	8
Asphaltum	8
Bitumen	8
Madder brown.....	8
Raw umber.....	8
Burnt umber.....	8

	PAGE		PAGE
Terre verte.....	8	Trees	21
Green oxide of chromium..	8	Foregrounds	23
Emerald green.....	9		
Brown pink.....	9	FLOWER PAINTING IN	
Verona brown.....	9	OILS:	26
		Materials for painting in oil	27
OILS AND VARNISHES:..	9	Mixture of tints.....	28
Vehicles	9	Preliminary practice.....	28
Linseed oil.....	9	Orange and brown flowers.	29
Poppy oil.....	9	Pink flowers.....	30
Drying oil.....	9	Blue flowers.....	31
Japanners' gold size.....	10	Red flowers.....	32
Volatile oils.....	10	Yellow flowers.....	33
Meglips	10	Red or pink roses.....	34
Mastic varnish.....	10	White roses.....	36
Copal varnish.....	10	Grounds for flower painting	37
		Opposition of light and dark	37
PROCESSES AND MAN-		Composition of lines.....	37
IPULATIONS:	11	Study of the character of	
Impasting	11	plants	38
Scumbling	11	Garishness in flower painting	39
Handling	12		
Breadth	12	LANDSCAPE PAINTING	
		IN WATER COLORS:	40
LIGHTS AND DARKS:....	13	Implements and materials..	40
To paint light.....	13	Paper	41
		Brushes	41
PRINCIPLES AND RULES		Colors	42
FOR LANDSCAPE		Stretching and preparing the	
PAINTING:	13	paper	47
The first painting.....	15	Scraping	49
The second painting.....	15	Effacing	49
The third painting.....	16	Handling the brush.....	50
		Method of working a land-	
COLORS AND TINTS FOR		scape	51
DIFFERENT PARTS		Coloring of a landscape....	53
OF A PICTURE:....	17	Trees and foregrounds....	56
Clouds	18	Figures in landscape.....	58
Distances	19	Sunset	58
Middle distances.....	20		

PAGE

PAGE

FLOWER PAINTING IN

WATER COLORS:....	61
Drawing single flowers....	61
Materials	62
The process of painting....	63
The primrose.....	65
The yellow crocus.....	66
The geranium.....	66
The rose.....	69
White flowers.....	69
Composition and arrange- ment	71

Gold	90
Relief gold.....	90
The wheel.....	91
Flushing	91
Firing	93
To transfer design to china..	94
Decorations	94
Lesson I.....	95
Lesson II.....	96
Lesson III. on roses.....	97
Color hints.....	99

CRAYON OR PASTEL
PAINTING — POR-
TRAIT PAINTING IN
CRAYONS:

Colors	73
Papers	73
Method of working in color- ed crayons.....	74
Color and the composition of tints	76
Draperies, backgrounds, etc.	76
Vellum	77
Coloring on vellum.....	78
Landscape painting in cray- ons	80
The paper.....	81
The sketch and execution...	81
To fix crayon drawings.....	84
Fixing by transudation....	84
Fixing by immersion.....	86
Fixing by aspersion.....	86
Fixing by steam.....	87

PEN AND INK DRAWING: 101

Practical instructions.....	106
The art of pyrography or poker drawing.....	116
The handle.....	117
The bottles.....	117
The metal union cork.....	119
India-rubber bellows.....	119
The spirit lamp.....	119
Benzine	120
Woods for burning.....	120
Processes and manipulation.	123
Landscape	128
The sky.....	129
Conventional design.....	131
Lines	131
Mistakes and accidents....	133
Negative pyrography.....	134
Pyrography and painting..	134
Leaving the white.....	135
Polishing	135
Cleaning pyrographic work.	136

CHINA PAINTING:.....	89
Materials	89
Colors for flowers and fruit	89

FLAT SHEET - METAL WORK:.....	137
Repousse on wood.....	139

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